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REPORT
OF THE
COUNCIL OF PUBLIC INSTRUCTION
OF THE
NORTH-WEST TERRITORIES
1900

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY



REGINA
JOHN A. REID, KING'S PRINTER
1901

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DEPARTMENT OF PUBLIC INSTRUCTION,
REGINA, *April* 20, 1901.

To His Honour

AMADÉE EMMANUEL FORGET,

Lieutenant Governor of the North-West Territories.

SIR,—

I have the honour to transmit herewith the Report of the Council of Public Instruction for the year 1900.

I have the honour to be, Sir,

Your obedient servant,

F. W. G. HAULTAIN,

Chairman, Council of Public Instruction.

REPORT OF THE SECRETARY

OF THE

COUNCIL OF PUBLIC INSTRUCTION

DEPARTMENT OF PUBLIC INSTRUCTION
REGINA, *April 20, 1901.*

F. W. G. HAULTAIN, Esq., M.L.A.,
Chairman, Council of Public Instruction.

SIR,—I have the honour to submit herewith the report of the Secretary of the Council of Public Instruction for the year 1900. As the report of the Council for the previous year was not published the statistical tables which have been compiled cover a period of two years.

STATISTICS.

General Summary.

	1899	1900
Number of school districts erected	51	49
“ schools in operation	454	492
“ departments in operation	545	592
“ pupils enrolled	18,801	20,343
Average attendance of pupils		9,430
Percentage attendance of pupils		46.35
Average length of school year—days		168
Total grants earned by all schools	\$147,547.70	\$163,014.00

Number of School Districts.

(Classes : Public School Districts, P.S.D.; Roman Catholic Public School Districts, R.C.P.S.D.; Roman Catholic Separate School Districts, R.C.S.S.D.; Protestant Separate School Districts, P.S.S.D.)

	1899				1900			
	Assa.	Alta.	Sask.	Total	Assa.	Alta.	Sask.	Total
Number of school districts erected during the year—								
P.S.D.	19	25	4	48	19	25	4	48
R.C.P.S.D.	2	..	..	2	..	..	..	..
R.C.S.S.D.	1	..	..	1	..	1	..	1
P.S.S.D. ....	..	..	..	..	..	..	..	..
TOTALS.....	22	25	4	51	19	26	4	49
Number of school districts in existence Dec. 31, 1899, and Dec. 31, 1900—								
P.S.D.	300	166	49	515	320	191	54	565
R.C.P.S.D.	13	15	18	46	13	15	18	46
R.C.S.S.D.	5	5	2	12	5	6	2	13
P.S.S.D.	1	..	1	2	1	..	1	2
Unorganised.....	2	1	1	4	2	1	1	4
TOTALS.....	321	187	71	579	341	213	76	630
Number of school districts in operation at any time during the year—								
P.S.D.	254	127	33	414	269	143	43	455
R.C.P.S.D.	10	10	6	26	8	10	6	24
R.C.S.S.D.	2	5	1	8	1	5	1	7
P.S.S.D.	1	..	1	2	1	..	1	2
Unorganised.....	2	1	1	4	2	1	1	4
TOTALS	269	143	42	454	281	159	52	492
School districts disorganised—								
P.S.D. ....	..	..	..	..	..	2	..	2
TOTALS. ....	..	..	..	..	..	2	..	2

Length of School Year.

Attendance of Pupils.

At all schools.	1899	Increase over 1898	1900	Increase over 1899
No. of pupils attending school during the year	18,801	2,047	20,343	1,542
“ boys “ “ “	9,735	1,041	10,713	978
“ girls “ “ “	9,066	1,006	9,630	564
Total aggregate attendances for first term . . .	956,928	150,049	1,059,630	102,702
“ “ “ “ second term . .	779,811	49,319	849,974	70,163
“ “ “ “ whole year . .	1,736,739	199,368	1,909,604	172,865

Classification of Pupils.

Class.	1899	Increase over 1898	1900	Increase over 1899
Standard 1, Part 1.....	5,103	393	5,618	515
“ 1, Part 2.....	3,184	260	3,442	258
“ 2.....	3,726	533	3,953	227
“ 3.....	3,682	577	3,885	203
“ 4.....	1,920	138	2,110	190
“ 5.....	782	144	920	138
“ 6.....	256	35	262	6
“ 7.....	127	—26	128	1
“ 8.....	21	—7	25	4
Totals.....	18,801	2,047	20,343	1,542

Comparative Statement of Attendance and Classification of Pupils in Rural and Town and Village Schools for 1900.

	Rural schools	Town and village schools
Number of pupils enrolled	10,794	9,549
Aggregate attendances of pupils.....	863,977	1,045,627
Daily average attendance of pupils.....	4,266	5,164
Daily average percentage of attendance of pupils.....	39.25	54.66
Average length of school year, days.....	156	208½
Average number of pupils enrolled in each department.....	26	55
Classification—Standard 1, Part 1.....	2,920	2,698
“ 1, Part 2.....	1,894	1,548
“ 2.....	2,232	1,721
“ 3.....	2,118	1,767
“ 4.....	1,208	902
“ 5.....	376	544
“ 6.....	40	222
“ 7.....	5	123
“ 8.....	1	24

*Comparative Summary of Financial Statements as shown by the Treasurers'
Annual Financial Returns.*

	1898	1899*	1900†
RECEIPTS			
	\$ c.	\$ c.	\$ c.
Balances on hand January 1	18,787.72	26,089.43	27,346.69
Government grants	104,478.70	126,632.74	150,656.56
Taxes collected during year	158,814.47	170,845.23	185,823.13
Fees from pupils	1,166.84	1,543.14	1,700.03
Proceeds of debentures and other sources, including Dr. balances	57,013.39	90,894.75	.....
Proceeds of debentures . . . . .	.....	.....	67,502.14
Other sources . . . . .	.....	.....	53,903.24
Debit balances . . . . .	.....	.....	2,630.15
	<u>\$340,261.12</u>	<u>\$416,005.29</u>	<u>\$489,566.94</u>
EXPENDITURES			
Teachers' salaries	186,258.48	204,929.37	234,976.14
Debenture indebtedness	33,044.09	33,540.47	32,259.81
Library . . . . .	.....	366.42	522.56
School apparatus	3,717.73	4,100.58	4,979.57
School furniture	6,398.13	7,122.41	6,391.65
School buildings and repairs	30,838.78	52,369.58	79,353.16
Caretaking and fuel	13,817.51	16,715.62	19,480.33
Secretary treasurers	8,836.54	9,877.38	11,375.27
Other sources	32,342.74	58,576.54	66,516.89
Balances on hand December 31	25,007.12	28,406.92	33,711.56
	<u>\$340,261.12</u>	<u>\$416,005.29</u>	<u>\$489,566.94</u>
AMOUNTS DUE TO SCHOOL DISTRICTS			
Arrears of taxes	53,520.99	59,307.67	73,239.75
Fees from pupils	333.79	312.93	351.21
Other sources	5,131.95	7,644.82	.....
	<u>\$58,986.73</u>	<u>\$67,265.42</u>	<u>\$73,590.96</u>
AMOUNTS DUE BY SCHOOL DISTRICTS			
Teachers' salaries	33,359.58	36,917.53	36,668.19
Outstanding accounts	18,114.30	24,887.19	32,211.08
Outstanding on buildings and land	13,717.60	27,408.17	87,742.23
	<u>\$65,191.48</u>	<u>\$89,212.89</u>	<u>\$156,621.50</u>

*Includes returns from 450 districts.

†Includes returns from 482 districts.

Comparative Statement showing Receipts and Expenditures of Town and Rural Schools for Year 1900.

	Town schools*	Rural schools*
RECEIPTS.		
	\$ c.	\$ c.
Balances on hand January 1.....	12,589.47	14,757.22
Government grants.....	57,768.93	92,887.63
Taxes collected during year.....	90,952.19	94,870.94
Fees from pupils.....	1,163.75	536.28
Proceeds of debentures.....	50,530.80	16,971.34
All other sources.....	31,899.28	22,008.96
Debit balances.....	2,254.89	375.26
	\$247,159.31	\$242,407.63
EXPENDITURES		
Teachers' salaries.....	98,690.73	136,285.41
Debenture indebtedness.....	16,901.44	15,358.37
Library.....	254.11	268.45
School apparatus.....	1,633.82	3,345.75
School furniture.....	2,772.65	3,619.00
School buildings and repairs.....	54,096.40	25,256.76
Care-taking and fuel.....	13,329.94	6,150.39
Secretary treasurers.....	4,948.34	6,426.93
Other sources.....	40,483.57	26,033.32
Balances on hand December 31.....	14,048.31	19,663.25
	\$247,159.31	\$242,407.63

*Includes returns from 67 town and village and 415 rural schools.

Debentures Authorised and Registered.

Year	Debentures authorised		Debentures registered	
	No. of school districts	Amount	No. of school districts	Amount
1898.....	39	\$23,985.00	30	\$20,435.00
1899.....	33	54,550.00	29	42,750.00
1900.....	61	94,500.00	52	77,800.00

Teachers Employed and Salaries paid during 1900.

Class of certificate	Schools open the whole year				Schools open part of the year			
	Number of teachers	Salaries per month			Number of teachers	Salaries per month		
		Highest	Lowest	Average		Highest	Lowest	Average
First, male.....	71	\$ c. 100.00	\$ c. 40.00	\$ c. 58.55	20	\$ c. 55.00	\$ c. 40.00	\$ c. 44.97
“ female.....	26	66.66	40.00	48.27	15	45.83	35.00	40.72
Second, male.....	88	83.33	35.00	45.35	92	50.00	30.00	42.37
“ female.....	101	60.00	29.33	42.25	104	50.00	32.50	40.77
Third, male.....	2	46.00	40.00	43.00	8	50.00	40.00	42.75
“ female.....	4	66.66	33.33	45.00	29	45.00	35.00	37.54
Permit, male.....	1	41.66	.....	41.66	14	62.50	35.00	41.96
“ female.....	4	50.00	33.33	38.33	12	40.00	33.33	35.94
Kindergartner.....	1	41.66	.....	41.66	.....	.....	.....	.....

	Town and village schools				Rural schools			
	Number of teachers	Salaries per month			Number of teachers	Salaries per month		
		Highest	Lowest	Average		Highest	Lowest	Average
First, male.....	45	\$ c. 100.00	\$ c. 42.00	\$ c. 65.50	46	\$ c. 55.00	\$ c. 40.00	\$ c. 45.85
“ female.....	23	66.66	40.00	49.00	18	45.83	35.00	41.25
Second, male.....	27	83.33	40.00	50.00	153	50.00	30.00	42.73
“ female.....	71	60.00	33.33	43.36	134	50.00	29.33	40.50
Third, male.....	.....	.....	.....	.....	10	50.00	40.00	43.60
“ female.....	2	66.66	33.33	50.00	31	45.00	35.00	37.70
Permit, male.....	.....	.....	.....	.....	15	62.50	35.00	41.94
“ female.....	2	50.00	35.00	42.50	14	40.00	33.33	35.69
Kindergartner.....	1	41.66	.....	41.66	.....	.....	.....	.....

	In all schools				Average salary per month paid in the Territories, \$41.39.
	Number of teachers	Salaries per month			
		Highest	Lowest	Average	
First, male.....	91	\$ c. 100.00	\$ c. 40.00	\$ c. 55.57	
“ female.....	41	66.66	35.00	45.50	
Second, male.....	180	83.33	30.00	43.82	
“ female.....	205	60.00	29.33	41.50	
Third, male.....	10	50.00	40.00	43.60	
“ female.....	33	66.66	33.33	38.44	
Permit, male.....	15	62.50	35.00	41.94	
“ female.....	16	50.00	33.33	36.54	
Kindergartner.....	1	41.66	.....	41.66
	592				

Licences to teach in the Territories Granted by the Council of Public Instruction.

(Professional : "P." Interim : "I.")

Class	1899			1900			Increase or decrease
	Male	Female	Total	Male	Female	Total	
First class P.....	15	5	20	13	5	18	-2
" class P.....	18	29	47	32	37	69	22
First class I*.....	19	2	21	19	4	23	2
" I†.....	9	4	13	16	13	29	16
Second class I*.....	34	25	59	42	34	76	17
" I†.....	33	44	77	32	56	88	11
Third class.....	5	12	17	2	13	15	-2
Provisional §.....	19	27	46	16	19	35	-11
Totals.....	152	148	300	172	181	353	53

* Granted to teachers who have passed the Territorial examinations.

† Granted to teachers presenting certificates from other parts of Canada, etc.

§ Including temporary certificates to substitutes for teachers who were ill or who were required to attend Normal School.

NOTE :—Interim certificates are granted to teachers who complete a course in training at the Regina Normal or who present approved professional certificates from the eastern provinces or elsewhere.

Professional certificates are granted to teachers who have taken Normal training and who have taught successfully in the Territories for at least one year on their interim certificates.

EXAMINATIONS.

Table I.—Public School Leaving Examination.

Number of candidates who wrote in 1899.....	195
" " " passed in 1899.....	76
" " " wrote in 1900.....	208
" " " passed in 1900.....	82

Table IIa.—Teachers' Non Professional Examination.

Where held	1899 No. of candidates			1900 No. of candidates		
	1st class	2nd class	3rd class	1st class	2nd class	3rd class
Regina	4	22	8	9	18	6
Moose Jaw.....	1	4	..	2	1	12
Medicine Hat.....	1	1	7	..	..	..
Maple Creek.....	..	..	..	..	..	3
Calgary .....	..	6	2	..	5	3
Lethbridge.....	..	5	..	..	4	5
Red Deer.....	1	3	9	..	2	3
Strathcona.....	6	8	12	6	15	9
Prince Albert.....	..	5	11	..	7	11
Bresaylor.....	..	..	4	..	..	..
Battleford.....	..	..	..	..	..	3
Oxbow.....	..	4	4	..	3	5
Wolseley.....	1	9	8	..	..	..
Indian Head.....	..	..	..	..	6	12
Moosomin.....	..	13	10	..	11	5
Saltcoats.....	..	2	..	..	..	..
Yorkton.....	..	..	..	..	2	1
The Pas.....	..	..	1	..	..	..
Totals.....	14	82	76	17	74	78
Totals.....	..	..	172	..	..	169

Table IIb.—Teachers' Non Professional Examination

1899						1900					
Examined			Passed			Examined			Passed		
1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
14	82	76	4	41 3*	31 15†	17	74	78	6	30 2*	19 19†
14	82	76	4	44	46	17	74	78	6	32	38
Totals	..	172	..	..	94	..	..	169	..	..	76

*Given 2nd class standing on results 1st class examination.
† " 3rd " 2nd "

Table III.—Teachers' Professional Examination.

1899						1900					
Examined			Passed			Examined			Passed		
1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
17	58	11	16	45	10	21	70	11	19	53	10

Teachers' Institutes and Conventions.

When held		Number of teachers in attendance		Increase or decrease
1899	1900	1899	1900	
Moose Jaw.....	Moose Jaw.....	18	17	— 1
Regina.....	.....	26	..	—26
Indian Head.....	Grenfell.....	33	34	1
Edmonton.....	Edmonton.....	49	64	15
Saltcoats.....	Yorkton.....	21	19	— 2
Moosomin.....	Wapella.....	35	37	2
Prince Albert.....	.....	21	..	—21
.....	Carnduff.....	..	23	23
Totals.....	.....	203	194	— 9
Percentage of attendance of teachers.....	.....	37	33	— 4

Summary of Normal School Sessions.

Year	Place	Length of session	No. candidates attending		
			Class of certificate		
			1st	2nd	3rd
1890	Moosomin.	April 8	..	1	6
1890	do	Nov. 17—Dec. 23	..	..	6
1891	No session.				
1892	Moosomin.	Jan. 4 — March 1	..	8	8
1892	Regina.	Jan. 4 — March 24	..	9	..
1892	do	Jan. 4 — Feb. 22	..	..	8
1893	Moosomin.	Jan. 4 — March 31	..	5	..
1893	do	Jan. 4 — Feb. 13	..	..	4
1893	Regina.	Jan. 4 — March 31	1	3	..
1893	do	Jan. 4 — Feb. 13	..	..	5
1893	do	Oct. 2 — Dec. 22	18	35	..
1894	do	Jan. 2 — March 15	..	..	27
1894	Calgary	Jan. 2 — March 15	..	..	10
1894	Regina.	Sept. 1 — Dec. 22	5	22	..
1895	Moosomin.	Jan. 2 — March 15	..	..	12
1895	Calgary	Jan. 2 — March 15	..	..	6
1895	Regina.	Sept. 1 — Dec. 22	9	13	..
1896	do	Jan. 2 — March 15	..	..	15
1896	do	Sept. 1 — Dec. 22	7	16	..
1897	do	Jan. 2 — March 15	..	..	25
1897	Edmonton.	Jan. 2 — March 15	..	..	13
1897	Regina.	Sept. 1 — Dec. 21	12	37	..
1897-8	do	Dec. 1 — Feb. 28	..	..	28
1897-8	Edmonton.	Dec. 1 — Feb. 28	..	..	7
1898	Regina.	Sept. 1 — Dec. 22	23	36	..
1898-9	do	Dec. 1 — Feb. 28	..	..	15
1898-9	Edmonton.	Dec. 1 — Feb. 28	..	..	10
1899	Regina.	Sept. 1 — Dec. 22	18	58	..
1899-1900	do	Dec. 1 — Feb. 28	..	..	10
1900	do	Sept. 1 — Dec. 20	18	67	..
1900-01	do	Dec. 3 — Feb. 28	..	..	9
1900-01	Edmonton.	Dec. 3 — Feb. 28	..	..	9
Totals			111	310	233

Summary of School Statistics 1886-1900.

Year	Schools in operation	Pupils enrolled	Teachers employed	Total grants paid to schools
				\$ c.
1886..	76	2,553	84	8,908.72
1887..	111	3,144	125	36,897.47
1888..	131	3,453	150	44,547.06
1889..	164	4,574	183	56,984.63
1890..	195	5,398	224	85,002.55
1891..	213	5,652	248	129,042.01
1892..	249	6,170	295	121,056.94
1893..	262	8,214	307	106,578.59
1894..	300	10,721	353	113,999.85
1895..	341	11,972	401	112,182.90
1896..	366	12,796	433	126,218.21
1897..	394	14,576	457	121,457.18
1898..	426	16,754	483	133,642.79
1899..	454	18,801	545	142,455.89
1900..	492	20,343	592	168,322.08

GENERAL REMARKS.

School Districts Erected.

During the year ending on the thirty-first day of December, 1900, no less than forty-nine new school districts were organised. The greatest increase has been in Alberta, where twenty-five districts have been erected; Assiniboia follows with nineteen and Saskatchewan with four. From present indications it is estimated that the increase in the number of schools for the year 1901 will be the greatest in the history of these Territories. During the first four months of the year some thirty districts have been proclaimed and about fifty are in process of formation.

In addition to the new districts proclaimed twelve additional departments were opened in districts already organised.

School Districts in Operation.

At the close of the year 630 districts were in existence. Of these 492, representing 592 departments, were in actual operation. With the rapid increase of settlement that is taking place it is fully expected that a large proportion of the 138 districts which failed or neglected to engage teachers last year will do so during the year 1901. In the case of those districts in which a school is not opened it is the intention of the department to ascertain as definitely as possible the cause, and an effort will be made through the school inspectors or otherwise to remove any obstacles which prevent the erection of suitable buildings or the engagement of teachers.

Attendance and Classification.

The increase in the enrollment of pupils for the year 1900 has not been as great as it was thought it would be. The returns received from 491 of the 492 schools in operation give a total enrollment of 20,343—an increase of 1,542 over the previous year. The statistical tables accompanying this report show how these are classified and indicate the increase that has taken place in the several public and high school standards. A table has also been prepared to show the attendance and classification of pupils in town (including village) and rural schools.

The total aggregate attendance for all pupils enrolled was 1,909,604 days. This gives an average of ninety-four days schooling for each pupil enrolled. The daily average attendance for all schools during the time they were in operation was 9,403 or 46.35 per cent. of the number enrolled. The average length of the school year for the 591 departments reporting was 168 days.

Teachers.

At certain seasons in the year—usually in spring—the supply of teachers scarcely meets the demand. The number of instances, however, in which schools are compelled to remain closed for any considerable length of time from this cause are very few. In view of the rapid increase in the number of our schools, and in view of the fact that many of our teachers annually seek other employment, we must continue to look to **Manitoba and the eastern provinces to supply our needs.** During the year

1899 some eighty-six teachers, nearly all of whom were afterwards licensed to teach, were trained in our normal schools. Notwithstanding this fact, however, no less than ninety-nine certificates were granted to teachers presenting diplomas from other parts of Canada and elsewhere.

The number of provisional certificates issued by the Council during 1900 was thirty-five—a decrease of eleven over the previous year. These certificates are granted upon the application of trustee boards, who are required to submit satisfactory evidence that they have made a reasonable effort to secure a qualified teacher and have failed. They are issued in the interests of the school and not of the teachers who secure them. In a number of instances provisional certificates were granted to persons engaged to act as substitutes for teachers who were ill or who were required to attend normal school.

Of the 592 teachers who taught in the Territories during the year 1900 all but five per cent. had professional or normal training, and no less than 87 per cent. held either first or second class certificates. In round numbers 22 per cent. of the teachers employed held first class, 65 per cent. second class, 7 per cent. third class and 5 per cent. provisional certificates.

The average monthly salary paid to all teachers for the year 1900 was \$44.39 for the time during which they taught. In the statistics accompanying this report will be found tabulated statements showing the average salaries earned by teachers holding the different classes of certificates and teaching in (a) schools open the whole year, (b) schools open part of the year, (c) town and village schools, (d) rural schools. In these tables it will be noted that the average salaries paid to teachers engaged in town and village schools are in every instance greater than those paid in rural districts, and also that a similar condition exists in the case of schools open for the whole year and for part of the year.

Grants to Schools.

During the year 1900 the 492 schools representing 592 departments which were in operation earned and have been paid government grants to the amount of \$163,014.00. Of this sum \$155,182.17 were earned under the provisions of clauses (a), (b) and (c) of Section 116 of The School Ordinance; \$5,363.53 under clause (d); \$1,363.75 under subsection (3) of section 116; \$171.73 under subsection (2) of section 117; and \$932.82 under subsection (3) of section 117. The average grant paid to maintain each department for an average school year of 168 days was \$275.36 and the average grant paid for each day each department was kept open was \$1.64.

The present system of paying grants is based in the main upon the number of days school is kept open, the number of pupils in daily average attendance, and the class of certificate held by the teacher engaged. It was devised chiefly in the interests of the settler in a pioneer country and had as its object the reduction of the taxes which had to be raised in support of schools to an amount within the means of the average ratepayer. Under this system all districts, regardless of area, population or wealth, receive practically the same aid. This has resulted during the past few years in a decided advantage to the more wealthy and densely populated districts, as the taxes to be levied against the individual ratepayer is thereby greatly reduced. At the same time, however, it should be noted that while the payment of grants on this basis has not to a similar extent

lightened the burdens of the tax payers in the weaker and in one sense more deserving districts, the aid which they continue to receive is sufficient to keep their taxes in most instances within reasonable bounds.

That the present basis upon which government aid to schools is calculated should be modified to meet the new conditions is now generally agreed. Owing to the rapid development that is taking place throughout the Territories many of the older districts have passed beyond the "pioneer" stage and can readily afford to become more self supporting without materially increasing their rate of taxation. In addition to this the large number of new districts that are being erected is a constant drain upon the treasury. During the year 1900 there were no fewer than forty-seven additional districts or departments entitled to assistance and there is every likelihood of this number being considerably increased in the immediate future.

Should the legislature deem it advisable to deal with the matter at the next sitting of the House it is respectfully suggested that any system which may be adopted should provide for the payment of grants at least partially in proportion to the ability of districts to support their schools. It might also be advisable to make a portion of the grant depend upon the efforts of trustees and parents. At present three of the greatest difficulties that have to be met in the working out of our educational system are the constant change of teachers, the irregular attendance of pupils and the short-term or summer school, and any plan that can be devised to lessen these evils will be a boon to the community at large.

Alterations in Boundaries of Districts.

This is a matter of growing importance and one that entails a vast amount of work on the part of the department. When school districts were first organised in the Territories, and for many years afterwards, they were erected to meet existing requirements. Owing to the limited amount of taxable land and the sparsity of children of school age the great majority of the districts that were formed embraced the twenty-five square miles of territory permitted by The School Ordinance, and in very numerous instances their boundaries were not contiguous. In recent years the older settlements have been rapidly filling up and as a direct consequence there has been an ever increasing demand for smaller districts. These demands usually originate with the settlers residing in the narrow strips of territory that have been left between established districts and in nearly every instance the petitions received call for alterations in the boundaries of surrounding districts.

In Manitoba and the eastern provinces of Canada the power to deal with these vexed questions is vested in the municipal or county councils, and rightly so as they are more thoroughly acquainted with local conditions and are in a better position to determine what would be a fair division of the territory in dispute. In the Territories, on the other hand, it has been found necessary, owing to the absence of local organisations or institutions, to deal with these matters from the central office, and while every effort is made to meet the wishes of those who desire that changes should be effected it is impossible for the Council of Public Instruction to determine as quickly as might be desired the manner in which the boundaries of several districts should be readjusted to meet existing needs. Usually before any action is taken by the Council an effort is made by the

department to obtain from the trustees and the ratepayers interested an expression of their views regarding the proposed changes and as in most cases this can be done only through correspondence, valuable time may be lost and more or less disaffection caused. Not only is this so but in many instances the replies received and the information gathered are so unsatisfactory that it is necessary to delay action until an inspector can be sent to investigate and report. Under these circumstances, and in view of the fact that the number of petitions for the readjustment of the boundaries of existing districts is rapidly increasing, the Council is of the opinion that the time has arrived when some simpler and more effective method of carrying on this work should be adopted. It also seems advisable in the light of past experience that when changes are determined upon they should only come into effect at the beginning of each year.

Compulsory Erection of School Districts.

At present the organisation of school districts is optional with a majority of the settlers interested, and while on the whole the adoption of this policy has worked satisfactorily there are instances where real hardship has resulted. From time to time instances have been reported to the department where the majority of the settlers in a community have succeeded in persistently preventing the formation of a district even when all the conditions required by the school law were present. The usual grounds for such action are either the absence of a direct personal interest in a school or the desire to avoid taxation. Whatever the cause or causes may be the outcome is a serious hardship to those who have children to educate, and to a limited extent may be a menace to the future welfare of the Territories.

While the necessary establishment of schools is thus occasionally prevented by the attitude of the majority in English speaking communities, the remarks made apply with greater force to some of the larger foreign speaking colonies scattered throughout the Territories. These people if left entirely to themselves will naturally be slow in adopting our institutions and as a consequence the process of their assimilation will be greatly retarded. In some of these colonies where the people have evinced a desire to have schools a step forward has been made, but if the educational needs of the Territories are to be fully met it is important that the right to establish schools wherever they are required should be delegated to the Lieutenant Governor in Council.

School Manual.

A very great portion of the correspondence of the department has reference to the building, furnishing and equipping of school houses, the appointment, duties and salaries of school officers, and other kindred topics. In order to reduce the amount of this correspondence to a minimum the Council has decided to issue a small pamphlet or school manual setting forth the regulations and recommendations of the department with reference to all matters pertaining to school grounds, buildings, furniture, apparatus, text books, library and reference books, school district records, the appointment and duties of district officers, etc.

As the manuscript for this pamphlet is partially prepared the Council hopes to be able to place printed copies of it in the hands of all trustee boards before midsummer.

Hitherto the great majority of schools in the Territories have been built regardless of sanitary or hygienic conditions. Comfort and conveniences were usually secondary considerations, while beauty and adornment have had but scant attention. As many of the first buildings erected are now being replaced by new structures, and as the very useful but antiquated log school house is giving way to the frame, stone or brick building, it might be advisable to adopt such regulations as will in future make the construction of all school houses conform more closely to the principles approved by leading authorities on school architecture. With this object in view the Council proposes to include in the manual to be issued sets of plans and specifications for the erection of one and two-room school houses together with instructions for properly lighting, heating and ventilating the same. It might also be advisable to so amend the Ordinance as to make it compulsory on the part of trustees to submit for the approval of the Council the plans and specifications of buildings which they proposed to erect.

Statistics.

The statistics accompanying this report have been compiled with considerable difficulty. The returns required by the Ordinance come in slowly and as a great many of them have to be returned for correction and alterations the work of the department is greatly increased. In a number of instances several letters had to be sent before the annual statements of school district officers were forthcoming. Provision is made in The School Ordinance for the forfeiture of school grants by those districts which fail or neglect to forward the returns which are called for but this penalty has never been enforced in the case of delinquents. In order to ensure greater promptness in future it might be advisable to fix a much lighter penalty and strictly enforce it. If a school district were to lose ten dollars of the grant to which it is entitled for each week that its returns are delayed beyond a certain date the matter would receive stricter attention at the hands of the trustees and their officers.

In addition to the statistics which have been compiled in the past it is the intention of the department in future to obtain more definite information regarding several important matters that are not at present reported upon. Several of these, such as the class of school building, the equipment of schools, tree planting, etc., are reported upon by the inspectors but their observations have not been summarised.

Annual Financial Statements.

In past years the department has experienced the greatest difficulty in obtaining correct financial statements from the treasurers of school districts. The tables which have been prepared from their returns, while not absolutely correct are approximately so. It will be noted that the balance of cash on hand at the close of the year 1899 does not correspond with that carried forward in 1900. This is accounted for by the fact that in a number of districts the accounts for the year were not closed until the day of the annual meeting, which may be held as late as the last Saturday in January. Then again the amounts of the grants received during 1900 is given as \$150,656.56 whereas the public accounts show that the amount paid was \$168,322.03. The difference is chiefly due to

the fact that the returns were not received from all districts. In addition to this it may also be noted that in a number of instances the treasurers neglected to include in their statements the amounts of the grants which were paid directly to the teacher.

Among the receipts the expression "other sources" includes amounts borrowed by note which are usually repaid during the year.

Education of Deaf Mutes.

On July 1, 1899, the Government of the North-West Territories entered into an agreement with the Government of Manitoba to maintain and educate all deaf mutes belonging to the Territories for a period of five years, provided not less than ten pupils are sent from the Territories and kept continuously at the Deaf and Dumb Institution at Winnipeg. In accordance with the terms of the agreement the cost of tuition and maintenance for each pupil is fixed at \$275.00 per annum. Since the agreement was entered into the Council has made every effort to ascertain the names of the deaf mutes residing in the Territories, and as a result of the enquiries thirteen pupils have been placed in the Manitoba Institute. Accompanying this report will be found a statement from Principal McDermid (Appendix A) which contains much valuable information respecting the course of studies which is pursued and the aims of the institution.

I have the honour to be, Sir,

Your obedient servant,

J. A. CALDER,

Secretary, C. P. I.

REPORT OF THE SUPERINTENDENT OF EDUCATION.

REGINA, *April 16th, 1901.*

F. W. G. HAULTAIN, Esq.,
Chairman, Council of Public Instruction.

SIR,—I have the honour to submit the following report for the consideration of the Council of Public Instruction:

GENERAL.

Courses of study and methods of teaching are shaped by certain considerations. The pupil must be prepared as a member of society to live a worthy life and earn a respectable living. The family, society, the state, the church, and the vocation and the school must co-operate in preparing him for his twofold life work.

He must acquire at least an elementary knowledge of the civilisation into which he is born and in which he must live worthily or unworthily. The child is a unit in the family, in society and in state, and the school as the instrument of these should as far as possible give him instruction and practice in his duties to each and so prepare him for that social service which is essential to the welfare of the community and the individual. In history and literature he reads of the real and ideal acts of men and of nations and so may receive instruction in duty, guidance in action and inspiration for effort, and thus his political duties and rights become clearer. He is led to form judgments on the moral qualities of deeds performed by those he reads about and this has a reflex effect upon his own acts. His training in manners and morals makes him acquainted with those habits and customs which rest upon respect for rights and feelings of others and are the measure of good behaviour in society. The lessons in hygiene make clear to him the necessity for obedience to the laws of health and for control of appetites. Music and drawing have their refining influence upon him.

To earn a living he must acquire some knowledge of the physical world and some command over its resources. He is to be a unit in industrial and commercial life, and the school as an educational instrument should give him the rudiments at least of that knowledge and manual skill on which rest industrial arts and commercial enterprises. In geography he learns the essential surface features of the earth and the relation thereto of man's modes of living—how man's industries, trade and commerce are affected by geographical controls. In nature study and agriculture he learns through observation and experiment something of plant life, animal life and soils and relates this knowledge to the work of the farm and the ranch. He learns writing, spelling, grammar and composition as helpful instruments in the arts of expression; and his mathematics as a necessary tool for weighing, measuring, evaluating the facts revealed in his study of man and nature.

He should gain all this knowledge by methods that will give to his mind power, balance, skill and the spirit of enquiry. And he should be led to see clearly that while he must earn a living as well as live a worthy life, the latter is the higher aim and the more difficult task, and that these two are not incompatible.

After all the truest test of a school is the character of the life the pupil lives in it each day. The school is a social organisation in which pupils live as well as work. Each has work to do for himself and for others, responsibilities to bear, opportunities for self denial and self sacrifice, pleasures to share and enjoy with others, recreations to be used rationally. It is a place characteristically a home rather than a shop, where true ideals, unselfish acts, honest work, controlled tempers, gentle manners, sweet voices blend and the child grows in social capacity and service till he passes into the larger world outside the school. The life he has lived during these years more than the learning he has acquired and the discipline he has undergone determines the manner of man he is to be.

COURSE OF STUDY.—*Public School Standards I—V.*

Our course of study has been framed to meet actual rather than ideal conditions. Eighty-three per cent. of the children enrolled in all our schools are found in the first three standards. The work undertaken in these standards may be set forth briefly.

Pupils are taught to read thoughtfully and helped to form a taste for good literature. They are taught to write a plain hand and compose simple letters of business or friendship, spelled correctly. In arithmetic the problems are chosen with due regard to the demands of commercial life and solved in such a way as to secure clear reasoning and accurate statement. In history pupils study, in outline, the lives of men who have shaped the progress of Canada: also the great struggles through which our country has attained its present measure of political freedom and industrial success. They learn something of the lives and work of England's famous men. They have a knowledge of land and water forms and of the geography of North America and the North-West Territories. In nature study and agriculture they become acquainted in an elementary way with plant and animal life and with the characteristics and treatment of soils. They are taught the elementary laws of health—the need for cleanliness, pure water and temperate habits—and how to deal with accidents “till the doctor comes.” The question of stimulants and narcotics is presented simply and temperately, and due attention given to instruction and practice in manners and morals. Vocal music and drawing receive less attention than they should.

The course of study is not a rigid one. It may be modified to meet the needs of special schools, but not till the written consent of an inspector cognisant of the local conditions has been obtained and the approval of the Council of Public Instruction received. These provisions are necessary to prevent unwise changes.

Ten per cent. of our total enrollment is found in Standard IV and less than five per cent. in Standard V. In these standards the pupils continue the study of the subjects begun in the lower standards. Algebra and geometry are added in Standard V.

The character of the work accomplished in the public school standards may be judged from the following summary based upon the reports of the inspectors and my own observations:

READING.

In the schools as a whole thought reading is well done. The children understand what they read and are able to give the substance of it in their

own words. Oral reading is not receiving quite so much attention as it deserves, though in a number of schools the pupils show that they appreciate the thought and sentiment of what they read. Accuracy, fluency, correct phrasing, voice modulation, and intelligent appreciation of the thought are necessary if the exercise is to give pleasure to the listener and the reader. The need for additional reading matter is urgent. Every school should have a library of books treating of history, literature, geography and elementary science suited to the age and advancement of the pupils. The great importance of committing to memory choice selections of poetry and prose has not been sufficiently realised by some of our teachers.

The following extracts from the reports of the inspectors draw attention to defects in modes of teaching this subject :—"Too much useless talk about the reading matter and not enough reading." "Merely rapid word naming." "Pupils are taught at home by the alphabetic method and have not been taught to use 'phonics' in any helpful way with the result that they are unable to make out new words." "The lesson was conducted in 'tandem' fashion—one child led the way and the others followed." "Oral reading is fluent but without expression." "Reading is too expressive, quite overdone." "Little attention is paid to articulation." "The plan was as follows: John reads with practically no expression. The teacher, without any comment or question on John's work, says, 'William, you read and see if you can do that better.' William reads. 'Henry, you try it,' is the next command. Just how this 'passing it on' without question or comment helps the pupil I have been unable to discover." "If distinct articulation were insisted on in every lesson as it is in the reading lesson the results would be much more satisfactory.

WRITING.

The vertical system is used and children learn it with ease and with gratifying results. In the junior classes the writing is carefully and neatly done but in the senior classes, owing to the amount of scribbling tolerated in exercise books and written tests, the work is not so satisfactory. Most of the senior pupils can write well but in too many schools they are permitted to write carelessly, or forced to write too rapidly. Judged by special tests the writing may be pronounced good, but judged by the every day record in the exercise books there is room for greater care and better teaching.

SPELLING.

Where the subject is *taught* the results are satisfactory. Even yet there are teachers who assign a spelling lesson by naming so many paragraphs in the reader. The pupil is not helped to discover the difficulties and receives no hints as to how to study the lesson. Sometimes these paragraphs contain, as Inspector McColl remarks, difficulties enough for a week instead of a day.

Increasing attention is given to the correction of mis-spelled words in the pupils' written exercises. It is observed that when these exercises are neat and well written the spelling is usually accurate.

ARITHMETIC.

In a large majority of the schools arithmetic is well taught, but in a few the little children are worried with large "sums" and fractional relations before they really know simple numbers. Great care is given to rapid and accurate calculating and yet the results are not wholly satisfactory. Pupils read problems intelligently and write out their solutions in good form.

Inspector Calder wishes that more attention were given to oral (mental) arithmetic. Inspector Perrett suggests that there should be greater variety in problems and that in the construction of these if teachers would depend less upon the text book and more upon their own ingenuity the problems would be better suited to the childrens' needs. Inspector Rothwell says that not infrequently the "business" problems proposed in Standard III call for a maturity of mind that cannot reasonably be expected at this stage.

COMPOSITION.

Comparing the present work with that of two years ago the inspectors are agreed that there is a distinct improvement. The work in the first two standards is not systematic enough. The main improvement noticeable here is in the language employed in asking and answering questions. The pupils talk with greater freedom, but the idioms of the home and the street are much in evidence.

In the remaining standards the mechanical work is neat, the thoughts gathered from the lessons in reading, history, geography and elementary science well selected and arranged, but there is a certain stiffness and baldness in expression which seem to indicate that the pupil writes, not because he has something to say but because he has to say something. Children need more systematic training in the art of expression. If day after day teacher and children together built up a simple story about some person or event they were interested in and wrote it out on the black board with due regard to mechanics all would learn to do by doing and would enjoy the work. After many such joint lessons one section of the class might work up the story and the other section act as helpful critics, looking for the best features. The teacher, always a tolerant generous critic, might show how the result could be improved. Later each pupil might be permitted to write a short story and read it to the class. The teacher should read two or three of these with the writers and show them how to make the good better. The reading and discussion of short stories and the picturing of incidents afford opportunity for informal but valuable training in oral composition.

GEOGRAPHY.

Increasing attention is given to direct observation of forms of land and water and it is no longer an offence to take children out of doors to study nature at first hand. In many schools the pupils keep charts of temperature, rainfall and sunshine. Emphasis is placed upon those parts of this subject that help the pupil to perceive how geographical "facts" affect man's industries, trade and commerce and he is asked to reason more and memorise less. Inspector Hewgill says that the chief defect in

the teaching lies in the presentation of too many details, especially in standards II and III—far more than the course of studies calls for.

When the school library contains a number of geographical readers there is, as a rule, broader teaching and keener interest. In Assiniboia a shrew agent sold a number of school boards expensive and rather useless geography charts which the Council of Public Instruction had refused to authorise. If half this money had been expended on suitable reference books and readers in geography the schools would have benefitted to a much greater extent.

NATURE STUDY AND AGRICULTURE.

For a somewhat detailed statement of what we are doing in these allied subjects I respectfully refer you to a report made through Dr. Saunders, of the Department of Agriculture, Ottawa, to the executive committee of the Council of Education in Great Britain. (Appendix B.)

Our inspectors report an improvement in this work.

“COLONY” SCHOOLS.

In my report of 1898 I said: “One of our most serious and pressing educational problems arises from the settlement amongst us of so many foreign nationalities in the block or ‘colony’ system. There are colonies of Swedes, Finns, Bohemians, Hungarians, Jews, Austrians, Germans, Russians, Icelanders, Mennonites, Galicians and Doukhobors.”

That the educational progress made in some of the “colonies” is most encouraging is shown by the following extracts from the reports of inspectors. I call especial attention to the fact that the best work accomplished in these schools is done by English speaking teachers practically unacquainted with the language of the “colony.” Each is a distinctly rural school.

ST. ISTVAN, No. 31. *Hungarians.* Inspector Hewgill reports:

READING Part I: They read intelligently in a “Hiawatha” primer—method correct, results excellent. Other classes in reading: Excellent mastery of words, meanings and thoughts. Each class is above the average in this subject.

ARITHMETIC: In all grades the work is fully up to the standard. The forms of solution are excellent.

WRITING: The general standing is above the average. Copy books excellent.

SPELLING: Very much above the average.

HISTORY AND GEOGRAPHY: Very good work in Standards II and III.

SCHOOL ROOM: Clean, neat; lavatory and fittings supplied.

PUPILS: Tidy, and particular about their appearance.

NOTE: Here in a school of Hungarians I find the course of studies carried out in all its details and the matter of it presenting no difficulty. Mr. O'Brien, the teacher in charge, does not know their language.

ROSE HILL, No. 459. Pupils all *Swedes.* Inspector Perrett reports:

READING: Word recognition good, articulation not very distinct, good grasp of thought, fair expression.

ARITHMETIC: Pupils make problems of good type, reasoning sound, statement of work complete and logical, advancement good.

COMPOSITION : Limited vocabulary but words used are generally correct and well chosen. Letter forms correct, contents natural and well arranged. Spelling weak.

GEOGRAPHY : They know land and water forms well and reason correctly.

NATURE STUDY : They observe closely, have a hearty appreciation of the purpose of the parts of a flower.

WRITING : Neat, careful, correct.

PUPILS : Cheerful, neat, orderly, prompt, interested. Miss Tunney, the teacher in charge, does not know their language.

STUCE GROVE, No. 450. Pupils, *Russians, Galicians and Germans*.

Inspector Perrett reports :

Classes were examined in subjects of their standards and were found to have made considerable progress. They read clearly, distinctly and with good expression. Their work in calculation is rapid and accurate. Spelling is somewhat weak. The juniors compose good sentences and the seniors write creditable letters. Their writing is uniform, careful and neat. The children observe closely and are able to connect common phenomena. More time might be given to thought reading, statement of work in arithmetic and the use of prepositions in composition. The pupils sing well. The "role" songs they chose for themselves and sang for me were "God Save the Queen" and "The Land of the Maple." The pupils are clean, neat, well behaved, cheerful and interested.

Miss Chegwin, the teacher in charge, does not know their language.

Many of the schools in these "colonies" rank far below these three. The cause is mainly their inability or unwillingness to secure and retain good teachers.

HIGH SCHOOLS.

The state recognises that the educated citizen is capable of higher service than the uneducated one, that the broader a man's views and the more liberal his culture the more intelligent will be his grasp of state needs and the more effective his labours in its behalf. The local community and the family recognise that the enrichment of the individual through liberal instruction and training along cultural, social and vocational lines means an improved home and community life. So these three agencies unite to provide, in the high school, opportunity for this instruction, training and culture to all who can take advantage of it. On these grounds mainly it claims and receives public support.

Except incidentally, it is not a fitting school for university or college or normal school. It is not a select school for the wealthy or the well born or intellectually gifted. It is for all who feel the need and believe in the benefits of education. It supplements and amplifies the work of the elementary school and gives a more adequate, because a broader, preparation for life.

The great majority of high school pupils do not go to college and should not prepare for teachers' examinations. It is the needs of pupils and not the entrance requirements of colleges and professional schools that must shape the high school courses of studies. The training undergone, the habits formed, the knowledge of literature, history, mathematics and science acquired in obtaining a satisfactory preparation for life must

surely be a good foundation on which to base the higher studies of the colleges and professional schools.

It is asserted that the energies of the teachers in some schools are devoted mainly towards preparing candidates for the examinations set for intending teachers and matriculants and that pupils who do not take these examinations receive scant attention. It is not surprising that under such conditions some ratepayers ask : " Why should we pay to have Mr. Jones' son prepared to go to college or to become a teacher ? " When such questions are asked trustees should examine the limit tables of their schools and see that the main ends for which these schools have been established are not treated as secondary ones.

No one man can teach the courses prescribed for Standards VI and VII and prepare students for nonprofessional third and second class certificates and do his work well. No one knows better than these teachers that the ends for which high schools are established cannot be accomplished under such conditions nor instruction given in any generous way. When in addition to this the teacher, as principal, has to undertake the supervision of the public school classes his burden is well nigh intolerable. Trustees who insist on such work being undertaken should be compelled to keep an adequate staff.

Successful work in a high school is not to be measured by the number of pupils who pass examinations. Even as evidences of intellectual acquirement and power these examinations are not entirely trustworthy. Unless the pupil leaves the high school with refined and gentle manners, with a self control sufficient to free him from the need of external restraint and guidance, with clear knowledge of his duties and sound views of the worth of life and its prizes, with a power of growth and a thirst after knowledge the school has not done its best work for him, however broad and accurate his scholarship.

REPORTS OF SUBEXAMINERS.

The answer papers of the candidates who present themselves each year for public school leaving or teacher's nonprofessional certificates are read by subexaminers selected from teachers who are university graduates. The following extracts from their reports give their judgments upon the character of some of the work done in Standards V, VI and VII, so far as examination results can reveal it. The criticisms are as frank as they are suggestive.

It must be borne in mind that at these examinations pupils may and frequently do write without the consent of their teachers and that some candidates are self prepared. Nor must it be forgotten that in a number of schools one teacher is compelled to attempt the work of two.

GRAMMAR.

Public School Leaving.—The work prescribed has been fairly covered. The definite answers given to questions show that the teaching has been exact. The careful arrangement and neat appearance of the written answers are commendable. It is a matter of regret that some candidates who were quite unprepared for the test were permitted to present themselves.

Third Class.—The work has been well done with the exception of that part relating to the history of the language. The answers are definite and the arrangement of material and the penmanship fair.

Second Class.—The stress of the teaching has been placed on analysis and parsing. Most candidates failed to answer the questions on the history of the language and on idiomatic constructions. The marked indefiniteness of the answers is a reflection on the teaching. The arrangement of answers, and the penmanship are below the standard that may reasonably be required of such candidates.

GEOGRAPHY.

Public School Leaving.—The low marks awarded indicate that this subject has not received the requisite amount of attention. The power of pupils to make deductions from given premises is weak showing that, in the teaching, undue prominence has been given to facts. Map drawing is not satisfactory. The language and style of answers evinced lack of training in composition. The spelling and grammar are not quite what ought to be expected from Standard V pupils. The matter is not well arranged and the penmanship in most cases is careless. Terminal marks excepted, there seems to be no attempt made to punctuate sentences. This paper should cause teachers to pay more attention to physical geography and to review the work of the lower standards.

Third and Second Classes.—Some of the second class candidates evidently had not read the prescribed text on physical geography. Neat and accurate maps are the exceptions. The answers are couched in general terms and betray a lack of reasoning power. The criticism on language, style, spelling, grammar, arrangement and penmanship, made on the public school leaving work, applies here. The questions are carefully graded and not too difficult. They direct attention to the importance of physical and commercial geography.

POETICAL LITERATURE.

Public School Leaving.—Many candidates have evidently not been trained to read questions carefully, and their answers have little bearing upon what has been asked. Little fault can be found with the language, spelling, grammar and arrangement of the answers. Memorising of choice passages appears to have been neglected. Considerable power to explain passages was revealed, coupled with a want of accuracy in defining words.

Third Class.—Candidates need instruction on how to write on an examination paper. It is not necessary to copy passages on which questions are based, but it is necessary to read each question carefully. In vocabulary, grammar and spelling the answers do not compare favourably with those of the public school learning candidates. Few understand what is meant by "diction" and many fail to distinguish paraphrasing and transposing. Judged by the answers the teaching has been narrow, and the candidates are lacking in power.

Second Class.—Speaking generally, the character of the answers is satisfactory and the evidences of power, marked. More attention should be given to the meaning and suitability of words, to poetic devices, and to the comparative treatment of poems (Question 9). The breadth of the questions suited admirably the amount of work to be covered during the year.

PROSE LITERATURE.

The kind of work called for by these papers, though new, has received its share of attention and the answers show that pupils have been trained to think for themselves. By requiring careful study of the contents of prose works, and definite reflection on the method of an author, this subject will assist in developing a discriminating taste in fiction and an improved style in composition.

COMPOSITION.

Principles.—The analysis of the prose selections reveals the need for increased attention to the laws of the sentence and paragraph, and the meaning and use of words.

Essays.—In mechanical form and arrangement of thoughts the essays are fairly satisfactory. Paragraphing is much improved. The spelling of candidates for third class is proportionately better than that of those for second.

HISTORY.

British and Canadian.—The questions are well distributed over the work prescribed. The answers reveal a fairly wide knowledge of historical facts but a limited grasp of their underlying principles. Pupils appear to have been left too much to their own devices in historical study with the result that their knowledge is somewhat unorganised. Penmanship is faulty, due perhaps to teachers permitting pupils to scribble answers in their daily work. The exact phraseology of the text appears so frequently as to indicate an inordinate use of the book in preparation. Spelling and grammar on the whole are not satisfactory. The probable effect of the papers will be to cause the teacher to lay stress on the idea of progress, to pay more attention to comparative history—to national movements with similar causes and results—and to current events. He will be led to develop the critical faculty in his pupils.

General History.—Candidates have evidently read the prescribed text carefully but there appears to have been more reading than teaching. They have not been led to see that history is a record of the growth of civilisation. Answers lacked precision. There was little attention given to continuity in paragraph structure, and to elegant expression of thought. Spelling and grammar were satisfactory but penmanship and arrangement of answers on paper were below the standard expected of such candidates. The effect of these papers on the teaching will be to give prominence to great movements rather than to separate events. They will encourage correlation of geography and history.

HOME STUDY.

There is conflict between the family and the school over the problem of home study. There should be agreement as to the sphere of each in the education of the pupil. The family entrusts the child to the school from nine to four o'clock and thinks that within that period the school should accomplish its share of their joint work, and that the remainder of the day should be devoted to recreation, rest, and the performance of those

home duties which life in the family imposes. All admit this in respect of the lower classes in the public school standards but in the higher standards there is no such agreement.

There the school, thinking much of the subject matter of instruction, invades the home and asks the pupil to make applications of what he has learned during the day, to extend this knowledge by collateral reading and to acquire habits of independent work. The family objects to this intrusion and points out that the pupil needs time for recreation, rest, and instruction in home duties, that the girl must have time for instruction in music and such household arts as cooking and sewing ; that she must have time for social intercourse with parents and friends and that at any one period the school represents but one side of her life interests and life preparation.

"I should like," said a parent, "to have opportunities of becoming acquainted with my children. Business does not permit me to reach home till six. Immediately after dinner my children have to retire to the library to devote the evening to solving problems in mathematics, reading many pages of history, drawing eye ruining maps and doing such other work as zealous but unwise teachers load them with. They rarely complete these tasks till after ten o'clock and then they are too tired to talk with me about the current events of the day, or the newer books, or to read with me out of my favourite authors, or to profit by that religious instruction which as a parent it is my duty to give. My daughters have practically no time for household duties. Our home has become an annex to the school and life a grind." Said another parent, "I'm tired of this everlasting round of home work. The teacher sets the problems and my child and I spend the evenings solving them. I'm paying him and doing much of his work." These are exaggerations, perhaps, but they represent the opinions of many an educated parent.

If the aims of home study are collateral reading to illustrate and amplify school lessons, tests of pupils' power to apply principles, and habits of independent study, it may be possible to accomplish these without interference with the rights of the home.

In the planning of time tables there ought to be due alternation of class work and seat work—of time for instruction and time for study. There are more and better books in the average school room than in the average home. When the pupil's power to apply principles is tested in the school room the teacher can be sure that the work submitted is the pupil's own and not a joint or substituted product. In the school room the pupil has so many minutes in which to prepare his work; it must be done within that period or he fails, thus the habit of immediate and persistent attention is fostered. In the home he may waste an hour over half an hour's work and so acquire bad habits of study.

Where parents and pupils for any reason determine that a year's work must be done in less than a year the school must encroach upon the home in order to do it and the teacher must cram to some extent. Taking into account the joint duties of the family and the school it is questionable policy to prescribe much home work. In some of our schools one hour is the limit for pupils in the fifth standard. If parents and teachers after consultation decide that the interests of pupils will be served by such study it should be planned to meet home conditions and conserve health. In all schools collateral reading and memory work should form the main part of this study, and where the pupils are under the instruction of more than

one teacher a log book should be kept by the principal and the amount and character of this home work examined closely each day to keep it within reasonable limits.

Dr. Prince, agent of the State Board of Education Massachusetts, after a careful study of European and American standards makes in substance the following recommendations as being in agreement with the practice of the most carefully managed American schools.

The requirements for home study should be considered in relation to the length of the school day and there should be no home study for pupils under the age of twelve.

Age	Length of school days (including recess)	Daily study at home	
		Minimum	Maximum
12.....	5½ hours.....	¼ hour.....	½ hour
13.....	5½ “.....	½ “.....	1 “
14.....	5½ “.....	1 “.....	1½ “
15.....	5 “.....	1½ “.....	2 “
16.....	5 “.....	2 “.....	2½ “
17, 18.....	5 “.....	2 “.....	3 “

These figures are given on the assumption that no study of any kind is required or permitted at recess or after school. The time indicated here for home study is intended only for pupils who are well. Minimum and maximum standards of requirements are fixed in the belief that the bodily as well as the intellectual welfare of pupils is enhanced by an accommodation of demands to ability. “The maximum limit is placed for the benefit of that class of pupils—generally girls who conscientiously do more than is required of them and who, for the sake of their health, need the restraint of a fixed standard of time for study, beyond which they will not be permitted to go.”

PROMOTIONS.

Promotions are made by teachers and are subject to revision by inspectors. Generally speaking they are made in rural schools at any period when the progress of the individual pupil demands them: in town schools they are usually made at the end of a term. Pupils differ so much in natural power, in industry, in home influences that some advance more rapidly than others and unless frequent opportunity is afforded for fresh classification the brighter pupils must mark time when they should be marching. Regulations that retard the progress of any pupil, and especially the bright one, should be reconstructed.

There are few teachers now who base their promotion solely or even mainly on written examinations held at the end of a term. They know that while these may test intellectual acquirements they cannot measure growth in application and conduct and cannot determine whether the pupil's highest interests will be best served by his remaining where he is for another period, or by his advancement to a higher grade. Education is a spiritual process and it cannot be measured by an examination foot rule. The examination is but one of several devices to enable the teacher to answer the question “What is best for the pupil?”

The following mode of determining the fitness of a pupil for promotion has been found helpful in town schools and can be adopted to rural ones:

I. The teacher at the end of each month writes in a book kept for the purpose (a) her estimate in words, not figures, of the amount and

character of the class work done by each pupil in each subject; (b) her estimate of his character, e. g. his application, ability, behaviour; (c) the marks obtained by him in written examination set by herself and the principal.

II. The principal after each visit to an assistant's room for purposes of oral or written tests, makes a note in this book opposite the name of a pupil who appears to be above or below the average in scholarship, ability and behaviour.

III. Shortly before the end of the period at which promotions are to be made the teacher, with this book before her, makes a list of pupils whose scholarship is satisfactory and whose application, ability and conduct warrant a belief in their power to do the work of the higher grade. Another list will contain the names of those about whose power she is somewhat in doubt. These lists are submitted to the principal who aids her in determining for the monthly estimates and his notes what is to be done in each case. The revised list will contain the names of those to be promoted. If the parents of any pupil not recommended for promotion apply in writing for a written test it shall be given, the papers being prepared by the principal and the answers read by the teacher into whose room promotion is sought.

By this scheme the teacher is compelled at frequent intervals to determine the status of every pupil in several directions; the principal is afforded an opportunity to estimate progress; each pupil knows that work at all times, not a spurt at the end, is necessary for promotion; the strain of final examination is removed from pupils who have worked steadily and the teachers are freed almost wholly from the examination burdens that now make the end of term a period to be dreaded.

SCHOOL GOVERNMENT.

There is a gradual improvement in the character of the government exercised in our school. The teacher is less of a "boss" and more of a sympathetic helper in the school room. He looks less at the pupil's outer deed and more at the inner motive that prompted the deeds, thinks less of the applications of external measures to compel outward good behaviour and more of the internal means by which the pupil shall himself see his fault as it really is, see it as an outcome of his own disposition, recognise his duty and determine to do it. Rational self correction and self control rather than teacher control must be our aim if we are to develop our children into self governing men and women. Yet now and then in spite of the teacher's best endeavours a wilful child has to be taught that there is a power in the school as in the state that he cannot successfully defy and that compulsion even of the sternest kind will be employed to prevent acts that injure himself and his fellows.

There is more consultation of parents and teachers and a better understanding of each others' aims and wishes. This mutual goodwill, confidence and co-operation is of great value in all school work and may be secured by any teacher possessed of sense and tact. It will be greatly increased when the school becomes as much a social centre as the church is, has its afternoon and evening meetings and makes itself felt as a social influence in the community.

The following suggestions made by the school management committee of Winnipeg some years ago meet in a most helpful way some local problems.

“No school regulation however necessary for general management should be enforced so as to be a hardship in particular cases; for example, the rule governing the nonadmission of children to school before a certain hour, when children arrive before that hour in severe weather.”

“A child going late to school should never be made to lose further time by being sent home for a written excuse,—the excuse will do equally as well the following session.”

“No comment that can be interpreted as reflecting on the child's home surroundings or home training should ever be made. If a parent is so indiscreet as to send a brusquely worded or discourteous oral message by a child, the indiscretion should end there. No retort should be returned by means of the child.”

“Adverse comments in pupil's reports, while often necessary, should be carefully worded. It is always painful to a parent to receive reports of this nature, and a caustic phrase suggests that the teacher is lacking in sympathy with him.”

“A pupil should never be detained at noon—he is thus prevented from appearing at the regular hour for the mid day meal and the home arrangements are invaded.”

“Pupils should not be detained after school hours so as to interfere with home engagements. If there is ground for suspecting that the pupil has brought about the engagement to avoid detention, the matter can be enquired into and settled after communication with the parents.”

“Pupils having engagements for lessons in music or other subjects should never be detained so as to interfere with such lessons.”

LIBRARIES.

It should not be necessary to give arguments in favour of establishing and maintaining libraries in every school district. In our schools we teach children how to read but owing to the lack of libraries it is difficult and often impossible to teach them what to read and to give them a taste for wholesome helpful literature. It is safe to say that a small working collection of books carefully selected—some for entertainment and inspiration, others for information—well nigh doubles the efficiency of the ordinary school.

Through the generosity of a few school boards, but chiefly through the energy of our teachers, we have small libraries in a number of schools. Until the legislature takes some definite action and gives some pecuniary assistance progress in the establishment of libraries will be slow and unsatisfactory.

On this continent three plans for securing school libraries have been tried but only one can be said to have succeeded.

Under the *Permission Plan* school boards are authorised to appropriate a certain sum yearly for the establishment and maintenance of libraries. This plan is varied by permitting the ratepayers to vote each year as to whether any sum shall be expended for library purposes. I know of no state or province where the plan has secured libraries in even half the schools.

Under the *Duplication Plan* the state within certain limits votes a sum equal to that raised by local tax for libraries. In Minnesota, after books are purchased by the local authorities, a suitable book case provided and a librarian (generally the teacher) appointed, a certified statement is

sent to the State Superintendent of Education and thereupon requisition is made upon the state auditor for one half the amount expended, but no district can receive more than \$20 the first year and \$10 each succeeding year. If at any time the local superintendent (inspector) reports that the books in any district are not properly cared for or used, such district may be excluded from the benefits of this library act. A similar act is in force in New York but in neither state are more than half the schools supplied with free libraries. In New Brunswick, whenever a school district raises a sum of money for establishing a library or adding to it, the board of education may grant to it a sum equal to one half the sum so raised, not to exceed \$20 in any one year. In that province there are 1771 schools yet only 24 schools were reported as purchasing books last year, and the amount of money expended was \$495.91 of which the province contributed \$158.63.

Under the *Mandatory Plan* school trustees must set aside annually for the purchase of library books a certain per cent. of the school grants apportioned to each district. In Wisconsin the treasurer must withhold annually for the purchase of library books an amount equal to ten cents for each person of school age residing within the district. In Iowa from five to fifteen cents, as may be ordered by the board, is withheld for each person between the ages of five and twenty-one for the purchase of library books. This money cannot be used to pay any expenses such as freight or express charges, postage, library cases or record books. These charges must be paid out of ordinary revenue. In California the county superintendent must set apart for district libraries from five to ten per cent. of all county school funds apportioned to each district. This is the only plan that has secured a library for every school. It is inexpensive and effective and I strongly recommend this plan in its general features to your favourable consideration.

Under any of these systems it has been found expedient to have library lists prepared by a central authority and to require all selections of books to be made from such lists. The books are kept in suitable cases in the school and the teacher is the librarian. A report is made yearly to the Department of Public Instruction and an inspector may check the returns at his visits.

At the request of a number of teachers, and to meet the needs for a small working library in rural districts, the accompanying list of books was prepared and sent to all who applied for it. For obvious reasons text books in use in such schools are not included.

Geography.

Frye's Large Geography.....	\$ 1.75
Frye's Brook and Brook Basins.....	.75
Shaler--The Story of our Continent.....	.90
Tarr's Elementary Physical Geography.....	1.40
Parker's How to Study Geography—D. Appleton and Co.....	1.50
Carpenter's Geographical Reader—Asia—American Book Co. ....	.70
“ “ “ —North America— “ “	.70
“ “ “ —South America— “ “	.70
Dodge's Reader on Physical Geography—Longmans, Green and Co.,	
N. Y. ....	.70
Heawood—The Geography of Africa—The McMillan Co.....	.75

Sime—The Geography of Europe—The McMillan Co.	\$.75
Dawson and Sutherland—The Geography of the British Colonies— The McMillan Co. ....	.75
American Book Company's Geographical Reader—especially good for South America. ....	.90
Jane Andrew's—The Seven Little Sisters—Lee and Shephard, Boston	.75
“ —The Seven Little Sisters prove their Sisterhood— Lee and Shephard, Boston . . . . .	.75
Frank Owen Payne—Geographical Nature Studies—American Book Co. ....	.25
The International Geography—Mill, D. Appleton and Co	3.50

Nature Study

Nature Study and the Child—C. B. Scott—D. C. Heath and Co . .	1.50
Boyden's Nature Study by Months—New England Publishing Co., Boston . . . . .	.70
Wilson's Nature Study (Teachers' Manual)—McMillan Co., N.Y. .	.90
Howe's Systematic Science Teaching, two vols.—D. Appleton and Co., each	1.50
Jackman's Nature Study in the Grammar Grades . . . . .	.60
Johonnot—Neighbors with Wings and Fins—D. Appleton and Co	.25
Burroughs—Birds and Bees—Riverside Literature Series . . . . .	.65
Baskett's “The Story of the Birds” —D. Appleton and Co.	1.50
Wright—Citizen Bird—The McMillan Co.	2.00
McIlwraith—The Birds of Canada	
Wright, Sea Side and Way Side Nos. 1, 2 and 3 at 35c., 50c., 75c., D. C. Heath and Co	1.00
Coulter—Plant Relations—Part I—D. Appleton and Co. ....	.40
Grant Allen—The Story of the Plants—D. Appleton and Co . . .	.75
Lovejoy—Nature in Verse—Silver, Burdett and Co.	
Newell—From Seed to Leaf; From Flower to Fruit, 75.; \$1.10 . .	.60
Kingsley—Madam How and Lady Why	
Black Beauty, Sewell: (Horse)	
Beautiful Jo, Saunders: (Dog)	

Agriculture.

Public School Agriculture—C. C. James	1.00
The Soil—King—The McMillan Co.	1.00
Principles of Agriculture—Bailey—The McMillan Co. ....	.75
Principles of Agriculture—Voorhees—Silver, Burdett and Co. . .	

History.

Jane Andrew's—The Ten Little Boys that lived on the Road from Long Ago till Now—Lee and Shephard, Boston . . . . .	.75
Longman's “Ship” Historical Readers, England, 7 vols.—Copp, Clark and Co.	3.00
H. de B. Gibbons—The Industrial History of England, 4th edition —Methuen and Co. ....	.90
Green—The Short History of England	
Marquis' Stories from Canadian History—Copp, Clark and Co. . . .	.25

Historical Novels—For the light they cast on the manners and customs of the times.

English Conquest.

Henty—The Dragon and the Raven—Copp, Clark and Co. . . .	\$.75
Kingsley—Hereward the last of the English.	1.25
Lytton—Harold the last of the Saxons. . . . .	.75

Norman and Plantagenet.

Scott—Talisman and Ivanhoe. . . . .	.50
Henty—Brothers in Arms—A story of the Crusaders.75

Roses.

Lytton—The Last of the Barons.75
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Tudors.

Scott—Kenilworth and the Lady of the Lake.50
Henty—By England's Aid.75

Stuarts.

Scott—The Fortune's of Nigel—Woodstock. . . . .	.50
Doyle's Mical Clark.	
Blackmore's Lorna Doone.	

Hanover.

Scott's Waverley. . . . .	.50
Henty—With Clive in India. . . . .	.75

Literature.

Copies of the leading poets of England and America.	
Palgrave's Golden Treasury.	
Kingsley—The Water Babies. . . . .	.50
Defoe's Robinson Crusoe. . . . .	.35
Lamb's Tales from Shakespeare (selected). . . . .	.35
Younge—Golden Deeds of all Times and Lands. . . . .	.65
Hughes' Tom Brown at Rugby. . . . .	.65

Burrage and Bailey—School Sanitation and Decoration—D. C. Heath and Co.

The ordinary retail prices are given for each book but dealers allow a discount when a number of books are included in one order,

TEACHERS' READING COURSES.

Teachers who had completed their professional training frequently asked for guidance in their subsequent reading. To encourage and direct them a Teachers' Reading Course has been established. It is optional and includes three books a year for three years. The following are the regulations governing the course:

"A teacher who presents certificates of having read satisfactorily the nine prescribed books shall be awarded a diploma. Additional diplomas shall be awarded to teachers who complete additional courses of nine books.

"A teacher who desires a certificate of having read satisfactorily the books prescribed for any year shall write brief essays on topics based upon each book and assigned by the Council. He shall also make a declaration that he has read such books and composed such essays. He shall send his declaration and essays to the Secretary of the Council not later than December 15th in each year."

The Course for 1900 shall be as follows:

1. Teaching the Language Arts, Hinsdale. D. Appleton and Co. \$1.00
2. Plant Relations Conlter. D. Appleton and Co. \$1.10
3. Talks to Teachers on Psychology, James. Henry Holt and Co. \$1.50

A number of teachers read this course and expressed their appreciation of the books selected. In some districts, notably at Edmonton, teachers met regularly for study and discussion.

In December a circular of instructions was sent to those who had expressed their intention of writing the required essays. The number of teachers who wrote was less than was anticipated, but I am informed that this was due in the main to pressure of school work at the close of the school year. It has been suggested that in future it would be better to have the time for sending in these essays extended to January 31.

[CIRCULAR]

The following rules are to be observed by those writing on the Teachers' Reading Course, 1900.

Essays are to be written in ink in a note book, say eight inches by ten inches, containing not less than one quire. During the composition of essays text books may be consulted.

On the page following the last essay applicants are requested to write and sign the following statement:

I (candidate's name in full) teacher School District No. declare that I have composed the essays contained in this book and that I have read carefully the following texts prescribed for the Teachers' Reading Course, 1900 (insert the names of the texts read):

.....
Teacher S. D. No.

These essay books, marked "Teachers' Reading Course" are to be sent to the Secretary of the Council of Public Instruction, Regina, not later than December 31, 1900.

ESSAYS.

James' Talks to Teachers on Psychology.

(Select any two subjects.)

1. The Laws of Association described and their applications shown in methods of memorising the first stanza of Longfellow's "Children's Hour;" in methods of teaching topics in algebra, geography and behaviour."

2. The pedagogical value of habit as illustrated in the intellectual, ethical and physical growth of the child.

3. The educational uses of the reactions, imitation and emulation in child life.

Hinsdale's Teaching the Language Arts.

(Select any two subjects.)

1. The function of the reading lesson and the composition lesson in language teaching.

2. The educational values of grammar and rhetoric and their relation to the language arts.

3. Discuss "Literature is a real study and an æsthetic study." Illustrate by showing somewhat fully how to teach the poem "Dear Harp of my Country." (Fifth Reader pp. 215-216.)

Coulter's Plant Relations.

(Both subjects.)

1. "The study of plant societies, to determine their conditions of living, is one of the chief purposes of botanical field work." Discuss somewhat fully and show how this study may be turned to use in our schools.

2. Discuss life relations as they affect the nutritive and reproductive work of the plant.

I have the honour to be, Sir,

Your obedient servant,

D. J. GOGGIN,

Superintendent of Education.

APPENDIX A.

EDUCATION OF DEAF MUTES.

Principal McDermid's Report.

MANITOBA DEAF AND DUMB INSTITUTION,
WINNIPEG, *March 25, 1901.*

F. W. G. HAULTAIN, Esq.,
Chairman, Council of Public Instruction.

DEAR SIR,—I have the honour to reply to a request from Mr. J. A. Calder, Secretary of the Council of Public Instruction, for a short report “regarding the deaf mutes of the North-West Territories who have received instruction in the Manitoba Institution.”

Since the arrangement entered into between the Governments of Manitoba and the Territories during the summer of 1899 there have been in attendance, altogether, thirteen pupils, divided as to sex ten males and three females.

The cost of tuition and maintenance, the latter including board, lodging, laundry and medical attendance, is \$275.00 per school term of nine months, beginning the second week in September and closing the second week in June. We do not make any distinction between tuition and maintenance as I believe the understanding with your Government was for the proper care of these unfortunate children, including all necessary expense excepting clothing and railroad fares, for the sum above mentioned, and in the event of children remaining during the summer vacation they were to be charged at the rate of fifty cents per day to cover the cost of board. As yet none of the children have claimed this privilege of remaining during the vacation and the charges so far have only been for tuition and maintenance during the school term.

A school for the deaf should not differ materially in its objects from the public school. It is purely educational and when we receive children who are unable to make progress in the classes we send them home, as we do not wish in any sense to create the impression that our institution is an asylum, a mistaken idea which has done harm in other states and provinces. Our aim is to give the deaf an education along the same lines adopted in the public schools with the addition of a trade that is best adapted to each individual child. We have had for the boys printing, but upon the completion of the new building carpentering and shoemaking will be introduced, while for the girls we intend to more fully develop their taste in sewing, which will include dressmaking, fancy work and plain sewing. Housework, such as cooking, ironing, etc., also receives attention. We desire to make our pupils self supporting and at the same time give them an education that will fit them to meet their fellowmen as intelligent beings. The uneducated deaf mute is little better than the intelligent horse or dog, and for him to remain in that ignorance means deterioration to a degree almost equal to the brute beast, allowing the brutal passions to have complete control. Should we not do more than to raise these children

from this mental darkness it would be a good work, but our work does not stop at this point. We place the brightest in an enviable position and enable them to cope with their more fortunate brethren in lines of usefulness.

Our course of study comprises seven grades but on account of the limited number of pupils as well as teachers it is necessary to have more than one grade to a class. We have all told four teachers. The grades are numbered from one to seven and begin with the lowest class.

I shall at all times be glad to furnish you the information you may require, in fact as a better means of grasping the work we are doing I would ask that Mr. Calder, your secretary, who I believe is an educational man, be authorised to visit our school and make a thorough inspection of all the details which do not always strike one with the same force when given in a written statement.

I have, etc.,

D. W. McDERMID,
Principal.

APPENDIX B.

DOMINION OF CANADA.
DEPARTMENT OF AGRICULTURE.

CENTRAL EXPERIMENTAL FARM,
OTTAWA, *January 13, 1901.*

D. J. GOGGIN, ESQ.,
Superintendent of Education.
Regina, N. W. T.

DEAR SIR,—I have lately received from a member of the executive committee of the "Council on Education" in Great Britain enquiries concerning agricultural education in Canada. He desires information especially in reply to the following questions—

(1) Is any agricultural instruction given in any of the elementary schools?

(2) Is any such instruction given in any of the higher grade or secondary schools?

(3) What provision is made for the training of teachers?

(4) What pecuniary or other aid is given by the Dominion or by the Provincial Governments?

(5) Do the experimental farms and agricultural colleges meet the requirements of the country, and how far do they benefit the labourer or the poorer classes?

I shall feel grateful to you for any information you can supply regarding the educational work in the North-West Territories bearing on these points.

Yours very truly,
WM. SAUNDERS,
Director.

WILLIAM SAUNDERS, ESQ.,
Ottawa, Ont.

DEAR SIR,—In reply to your letter concerning agricultural education in the North-West Territories I submit the following:

Question (1) Is any agricultural instruction given in any of the elementary schools?

Answer (1) Yes. The following course is compulsory. Public School Standards I—V inclusive—ages 5 to 14.

NATURE STUDY AND AGRICULTURE.

(Teacher's reference books: Newell's "From Seed to Leaf," Goodale's "Concerning a Few Common Plants," Grant Allan's "The Story of the Plants.")

To interest pupils in nature, to train them in habits of careful observation and clear expression, and to lead them to acquire useful knowledge are important aims in teaching this subject.

The pupil must study the plant, the animal and the soil rather than book descriptions of them. He may consult books after he has made his observations. The study of plant life should be emphasised in spring though not restricted to that season.

This study should be connected with language, drawing and geography.

Standard I.

Plant Life:

Seeds : Bean, pea, sunflower, corn, wheat.

Germination : its conditions—light, air, moisture, soil, warmth.

Structure : covering, cotyledons, embryo.

Seedlings : Parts—stem, roots, leaves.

Buds : Poplar, willow, maple, elm, spruce.

Covering, unfolding, arrangement on stem.

Animal Life: Cat, dog, cow, horse, sheep, hen, fish.

Covering, food, uses.

Standard II.

Plant Life :

Seeds : Fuller study of the germination, growth and structure of seeds selected from Standard I.

Plant structure : Herbs, shrubs, trees.

Stem : Its parts—wood, bark, pith; their uses.

Root : Its parts—primary root, rootlets, root hairs; their uses.

Leaf : Its parts—stipules, stock, blade, veins; their uses.

Fruits : Apple, orange or lemon, plum or cherry, pumpkin or squash, raspberry or strawberry; the uses of their parts to the plant and to man.

Animal Life: Fuller study of the animals selected for Standard I, including structure of feet, head and teeth; relation of structure and habits.

Standard III.

Plant Life:

Leaves : Their position, arrangement, form, and venation; their relation to sunlight, air and direction of water to roots.

Flowers : Silverweed, anemone, rose, violet, everlasting pea, sunflower, wild bergamot; arrangement and uses of their parts.

Roots : Wheat, willow, carrot, turnip, radish, potato. Their forms, and the uses of their parts to the plant and to man.

Soils : Outline study of formation, composition, classification, exhaustion, restoration. (Public School "Agriculture," chap. III.)

Animal Life : Ant, fly, grasshopper; hawk, crane, duck; gopher, wolf, muskrat—adaptation of their forms and structure to their modes of life.

Standard IV.

Plants : Their food—its sources, how taken up, how assimilated; their reproduction, propagation; dissemination of seeds.

Weeds : Bindweed or wild buckwheat, tumbleweed, hedge mustard, stinkweed, Russian thistle; methods of destroying. ("Agriculture," chap. XII.)

Trees : Their cultivation for shade, ornament and protection. ("Agriculture," chap. XIX.)

Soils : Preparation of for seed. ("Agriculture," chap. VI.)

Animals : Feeding, care and management of horses, cattle, sheep and swine. ("Agriculture," chap. XIV.)

Insects : Growth, classification, remedies. ("Agriculture," chap. XII.)

Standard V.

Tillage : Drainage, fertilisers, subsoiling. ("Agriculture," chap. V.)

Crops : Their growth, management, rotation ; diseases, remedies ; soiling crops. ("Agriculture," chap. VII, VIII, IX, XI.)

Animals : Principles of feeding. ("Agriculture," chap. XIII.)

Dairying : ("Agriculture," chap. XVII.)

Question (2) Is any such instruction given in any of the higher grades or secondary schools ?

Answer (2) Yes. The following courses are offered and are compulsory on all who are preparing to pass the teacher's nonprofessional (academic) examinations :

High School, Standard VI. Topics : Definitions, plants, soils, tillage, crops, weeds, insects. (There is an accompanying course in the elements of structural botany.)

High School, Standard VII. Topics : Plants, soil, tillage, crops, weeds, insects, birds, feeding, care and management of animals, dairying, cultivation of trees. (There is an accompanying course in the elements of structural botany.)

The following abstract from my report of 1898 indicates what we are doing and the spirit in which we approach the work—

"Nature study is steadily gaining in the estimation of teachers, the appreciation of parents and the interest of children. In most schools the nature of soils and the growth of plants and flowers are studied objectively. Plants are grown in bottles, pots and boxes ; in water, sand, sterile and fertile soil. The effects on growth of light, air, moisture and warmth are demonstrated. The lessons thus learned in school are enforced by observations of the growth of plants, trees and vegetables outside the school and the homes. Common animals and birds are observed and their uses, food habits, and adaptation of form and structure to modes of life studied. These nature lessons form the basis of many reading and drawing exercises and have additional light thrown on them by the study of those kindred selections from literature which help pupils to see and appreciate the finer things in Nature. Continued progress in this study must come through broader conceptions of its aims.

"There is a knowledge of Nature which contributes to the earning of a living ; this is a practical view of it. This knowledge may be taught in such a way as to give a training in observation, and in scientific method ; this is the disciplinary view. There is a knowledge of Nature which leads the pupil to see the beautiful in it, to enjoy it and so add to his happiness ; this is the æsthetic view. There is a knowledge of Nature which, through the life history of plant and animal, throws light upon the pupil's own life, gives him an insight into all life in its unity, and leads him to look up reverently to the Author of all life—through Nature up to Nature's God—the thought that makes life worth living ; this is the spiritual view. The bud that expands into a flower and develops into a fruit that nourishes

my body has also a beauty that appeals to my eye and, if I will but reverently ponder it, has a message for my spiritual guidance and sustenance.

“The attitude of the teacher is a most important factor in the results obtainable from this study. There are, commonly, two attitudes—that of the scientist and that of the artist—of the man who seeks to know, and the man who delights to enjoy. The teacher who is to cause the child to see Nature in her different aspects, to reap the harvest of a quiet eye, must have strayed where his children are to wander, must have seen the beauty they are to see, must have felt what they are to feel. He must have seen Nature in her scientific aspects that his knowledge may be definite ; in her artistic aspects that her beauty and harmony may be appreciated ; in her spiritual aspects that he may read her message, see the unity in all life, see her as the flowing vestment of an unchanging reality.

AGRICULTURE.

“The pupil who has done the work in Nature Study prescribed in our first three standards has acquired that elementary knowledge of the soil, the plant, and the animal upon which the study of agriculture rests. Our public school cannot teach the art of agriculture and does not undertake to do so. It does not teach a pupil the art of ploughing but it does teach him why he should plough and the reasons for deep or shallow tillage. It does not teach him the art of harrowing or cultivating but it does teach him how harrowing or cultivating may conserve soil moisture—one of the most important problems western farmers have to deal with. It does not teach him the art of growing different grains but it does teach him how a grain of wheat or barley, or a pea germinates, gets needful air and warmth, obtains nourishment from the soil and how tillage is related to deep feeding or shallow feeding grains. It does attempt to teach pupils the principles upon which sound agricultural practice is based and it is accomplishing its task year by year with increasing success.

“The reports of inspectors confirm the statements of our best teachers that where this subject has received its due share of attention its right to a prominent place on our curriculum is undoubted, whether judged by its disciplinary effect or its practical value. That it has been taught badly by some teachers and neglected by others during the six years it has been a compulsory subject on our curriculum is admitted but there are few subjects that have not suffered similarly. The teaching of it has been opposed by some who think of agriculture only as an art, tolerated by others who consider it a concession to an important element of our population that may not be ignored with safety, and warmly supported by many who see in it not only a useful subject of study but also a means of increasing an intelligent sympathetic interest in agricultural problems and adding value and dignity to farm life.

“In the examination of Public School Leaving candidates and candidates for teachers' nonprofessional and professional certificates, agriculture continues to be a compulsory subject. The course in the elementary schools deals in outline with soils : their formation, composition, classification and preparation for seeding ; with drainage, subsoiling and fertilising. It deals with plants : their food supply and modes of propagation ; weeds—their causes and remedies : trees—their cultivation for shade, ornament and protection. It deals with animals—the feeding, care and management of horses, cattle, sheep and swine. In the High School Standards

this course is reviewed and expanded, and the principles restudied with the aid afforded by the pupil's knowledge of physics which helps to explain 'the influences of light and heat, and the movements of fluids in soil, plant and animal and the forces concerned in every machine and appliance ;' of chemistry which throws light upon life processes of plants and animals and the fertilisation of soils ; of botany which is systematised plant knowledge ; of physical geography which shows how soil conditions the growth and habitat of plant and animal."

Question (3) What provision is made for the training of teachers?

Answer (3) In the Normal school, the work done in the public and high school standards is reviewed from the standpoint of method and the student's knowledge widened by the reading of reports of experimental stations, bulletins and monographs. It is recognised that in the elementary classes the pupils can know practically nothing in a scientific way of physics, chemistry and botany and that accordingly principles must be illustrated in a nontechnical way with the materials available in the environment of the ordinary rural school. The Normal school trains intending teachers to do this.

Question (4) What pecuniary or other aid is given by the Dominion or by the Provincial Government?

Answer (4) No special aid is given by the Dominion or Local Government for agricultural instruction in any of our schools. Agriculture is on the same basis as the other subject of instruction.

Question (5) Do the experimental farms and agricultural colleges meet the requirements of the country, and how far do they benefit the labourer or the poorer classes?

Answer (5) We have no agricultural college in the Territories. The experimental farm at Indian Head is doing much useful work. The conditions in Western Assiniboia and Southern Alberta, and again in Northern Alberta and Saskatchewan differ so much from those in Eastern Assiniboia that the Indian Head farm is of less direct assistance out there than local experimental farms or stations would be.

I venture, with some hesitation, to express the opinion that the experimental farm benefits the better class of farmers much more than it does the "labourer or the poorer class," using this phrase as it is employed in Great Britain.

Yours faithfully,

D. J. GOGGIN,
Superintendent of Education.

APPENDIX C.

MAINTENANCE OF SCHOOLS.

Schools are maintained by legislative grants and by local taxation. The legislative grants are fixed by Ordinance and the following are the provisions governing them—

There shall be paid from and out of any moneys appropriated by the Legislative Assembly for schools, in aid of schools organised under and conducted according to the provisions of the Ordinance, night schools, normal schools and teachers' institutes excepted, an amount to be calculated as follows—

- (a) To each school having an average attendance of at least six pupils for the days during which it has been open in any term, a sum of \$1.40 for each day the school is open: Provided, that the total number of days in each year for which grants may become payable shall not exceed 210;
- (b) For every pupil in average daily attendance an additional amount of \$1.50 per school year of 210 days;
- (c) To each school where a teacher is employed who holds a first class professional certificate the sum of 20 cents for each day (not exceeding 210) in the year such teacher is actually engaged in teaching; and to each school where a teacher holding a second class certificate is so employed, the sum of 10 cents for each day (not exceeding 210) in the year such teacher is actually engaged in teaching.
- (d) To each school attaining a minimum grading upon the reports of its inspection, as prescribed by the Council of Public Instruction, on its efficiency in respect to buildings, equipment, government and progress, a sum not exceeding 15 cents nor less than 5 cents may be paid according to such grading, for each day (not exceeding 210) on which the school has been kept open during the year;
- (e) To any high school complying with the provisions of the Ordinance and the regulations of the Council of Public Instruction, a special grant of seventy-five dollars per term;

Provided, that in case the sum of the grants to be paid in any term under subsections (a), (b) and (c) of this section shall exceed 70 per centum of the salary actually earned by the teacher during that term, the amount of the grant under the aforementioned subsections shall be reduced to the amount of the said 70 per centum of salary paid;

Provided further, that payment may be made in respect of the amounts earned under subsections (a), (b) and (c) of this section at the end of the terms closing on the thirtieth day of June and the thirty-first day of December, on receipt of the return prescribed by the Council of Public Instruction and provided for in subsection (2) of section 91 of the Ordinance; but the grant earned by any school under clause (d) shall be paid only with the last payment of the year;

Provided further, that in schools that are only open during a portion of the year payment may be made in respect of the amounts earned under

clauses (a), (b) and (c) as soon as the school closes for the year on receipt of the return prescribed by the Council of Public Instruction and provided for in subsection (2) of section 91 of the Ordinance ;

Provided further, that in schools where more than one teacher is employed, each department shall rank as a school under the provisions of clauses (a) and (d) of this section, when the average attendance of the whole school shall at least equal 20 pupils to each teacher employed; but no board of trustees shall engage an assistant teacher (expecting Government aid on that account) without having given the Department of Public Instruction at least three months' notice of their intention to do so and having received its approval ;

Provided further, that the amount or amounts shown in the treasurer's return, provided for in subsection (2) of section 91 of the Ordinance, to be due to any teacher or teachers, shall be paid direct and proportionately to such teacher or teachers to the extent of the grant ;

Provided further, that no grant shall be paid to any school district until the bond of the treasurer provided for in section 90 shall have been received and registered by the Council of Public Instruction ;

Any school which has been closed on account of the absence of the teacher in attending a teachers' institute held under the Regulations of the Council of Public Instruction, shall be entitled to all grants as if the school had been actually in operation during such period. For the purpose of computing the grant for such period the average attendance for the week immediately preceding the closing of the school shall be deemed the actual attendance during the period it remains closed from this cause.

Upon the recommendation of the Chairman of the Council of Public Instruction the Lieutenant Governor in Council may order the payment of a special grant to any school, whether organised according to law or not, out of the general revenue fund of the Territories.

Whatever additional sums may be necessary for the conduct of the school are raised by local taxation. Two sections of land (1,280 acres), in each township are reserved and held in trust by the Dominion Government as school lands for aiding and promoting education. This means an endowment of about eleven million acres.

APPENDIX D.

PROGRAMME OF STUDIES FOR THE SCHOOLS OF THE NORTH-WEST TERRITORIES.

This Programme is based on a *minimum* requirement for each Standard. It is prescribed by the Council of Public Instruction as a guide in classifying pupils. It may be modified to meet the needs of special schools but not without the written consent of an Inspector who shall forthwith report to the Council. The work in each Standard includes a review of the essentials in previous Standards.

It shall be the duty of each teacher to make a Time Table, based on this Programme, and to present it to the Inspector at each visit for his approval and signature.

READING AND LITERATURE.

Silent reading is used to obtain ideas and thoughts through printed or written words—to comprehend the subject matter as a whole and to grasp the significance of the parts, as well as to discover and appreciate beauties of thought and expression.

Oral reading is used to express these ideas and thoughts so as to be heard, understood and felt. It involves systematic training in the principal elements of expression—quality of voice, pitch, force, time, stress, inflection, emphasis, pause.

Supplementary reading is used to furnish additional reading matter; to provide reading collateral to the studies in nature, geography, history, literature, etc.; to cultivate a taste for good literature. Its use is optional.

Sight reading in silence is used to give power to glean thought quickly and intelligently from the printed page. It is followed by logical statement, in the pupil's own words, of what he has gleaned.

Selections of poetry and prose inculcating reverence, love of country, love of nature and admiration of moral courage are to be committed to memory and recited.

Standard I.

Authorised First Readers. Authorised Supplementary Readers.

Standard II.

Authorised Second Readers. Authorised Supplementary Readers.

Standard III.

Authorised Third Reader. Authorised Supplementary Readers.

Standard IV.

Authorised Fourth Reader. Authorised Supplementary Readers.

Standard V.

Authorised High School Reader. Authorised Supplementary Readers.

ORTHOEPY AND SPELLING.

Much attention should be given to accurate pronunciation. Pupils of the third, fourth and fifth Standards should have constant practice in finding the pronunciation and meaning of words from the dictionary.

Special drills should be given on such words as are in their nature difficult to spell, and such as have been frequently misspelled in compositions. Pupils should not be drilled on the spelling of words which they may seldom or never have occasion to use.

Standard I.

Part I. Phonic analysis and synthesis, copying words, oral spelling.

Part II. Phonic analysis and synthesis, oral and written spelling of such words in each lesson as the pupil can learn while mastering the reading matter, transcription, dictation, uses of capital letters and terminal punctuation marks.

Standard II.

Phonic analysis and synthesis ; transcription ; oral and written spelling of such words in each lesson as the pupil can learn while mastering the subject matter—words to be arranged so far as possible in groups according to similarity in form ; dictation ; careful attention to spelling in all written exercises ; uses of capital letters, terminal punctuation marks, quotation marks.

Standard III.

Careful attention to spelling in all written work ; exercises as in previous Standards ; division of words into syllables and marking the accent ; common abbreviations and contractions ; simple synonyms.

Standard IV.

Exercises as in previous Standards ; a few helpful rules of spelling formulated inductively ; meaning of common prefixes and suffixes.

Standard V.

Exercises as in previous Standards. Derivation and composition of words, exercises being confined mainly to words which have an English primitive. (Consult "High School Grammar," chapter IV, especially pp. 88-90, exercises I—X.)

COMPOSITION.

(a) Compositions should consist, almost entirely, of expressions of thoughts evolved in the teaching of such studies as geography, history,

agriculture, literature, etc. (b) Through progressive exercises both critical and constructive the pupils should be led to discover and apply the leading principles and maxims of expression. Only the most important errors should be corrected in any one composition.

Standard I.

Brief oral and written expression, in complete sentences, of simple thoughts suggested by observation of objects, animals, plants and pictures; narration of personal experiences; reproduction of the substance of the lesson in reading, etc.

Standard II.

- (a) Brief oral and written description of observed objects, animals, plants and pictures; narration of personal experiences; reproduction of the substance of the lessons in reading, history, etc.; simple letter writing.
- (b) Combining thoughts into a simple sentence; mechanics of a composition—heading, margins, etc.

Standard III.

- (a) Correct oral expression of thoughts evolved in the teaching of all subjects; brief, accurate and legibly written expression of these thoughts; the paraphrase.
- (b) Sentence structure in outline; use of the paragraph; forms for letters, accounts and receipts; drill to correct the chief errors revealed in written expression.

Standard IV.

- (a) Correct oral expression of thoughts evolved in the teaching of all subjects; brief, accurate and legibly written expression of these thoughts; the summary [abstract]; social and business letters.
- (b) Sentence structure: paragraph structure and outline; drill to correct the chief errors revealed in written expression.

Standard V.

- (a) Correct oral expression of thoughts evolved in the teaching of all subjects: rapid, accurate, and legibly written expression of these thoughts; essay writing (themes.)
- (b) A systematic summary of the principles and maxims of expression previously discovered in practice; application of these in the correction of errors revealed in written expression; paragraph structure; pupils trained to criticise compositions in a methodical way.

GRAMMAR.

Grammar shows the structure of language. By revealing the rules of sentence building it helps the pupil in using correctly the forms of speech which the necessities of expression require. (Composition.)

Through the logical forms of subject, predicate and modifier, it reveals the essential nature of thought and is an aid to the more thorough understanding of reading lessons.

The teaching of formal grammar should be brought into close connection with the work in reading and composition. Routine parsing and minute analysis should be avoided.

Standard I.

Oral correction of colloquial errors.

Standard II.

Correction of colloquial errors ; division of a sentence into subject and predicate.

Standard III.

Correction of errors in the language used by pupils. Kinds of sentences—assertive, interrogative, etc. ; purposes of each. Parts of speech, phrases, clauses—their functions and places in sentences. General analysis as an aid in getting the ideas in a sentence, and learning what words and groups of words do in the expression of thought.

Standard IV.

Correction of errors in the language used by pupils. Kinds of sentences—simple, compound, etc. ; purpose of each. Division of the parts of speech according to use ; inflection in outline. General analysis used as a means of discovering the relation and position of ideas in a sentence.

Standard V.

An intelligent comprehension of the prescribed text book.

HISTORY.

Training of the moral judgment and preparation for intelligent citizenship are important aims in teaching history. History should be associated with geography and literature—historical poems, etc.

Standard II.

Canadian History.—Lives of distinguished men described, e.g.—Columbus, the Cabots, Jaques Cartier, Champlain, Bishop Laval, Frontenac, La Salle, Montcalm, Wolfe, Sir Guy Carleton, Lyon Mackenzie, Papineau, Joseph Howe, Alexander Mackenzie, Sir John Macdonald, etc. Discussion of the chief excellences and defects in their characters to teach moral discrimination and, ultimately, to derive principles of conduct. Reading and reciting of patriotic poems.

Standard III.

Canadian History.—Outline study of leading features, e.g.—Discovery ; exploration ; struggle between the French and English Colonists ; Treaty of Paris ; Quebec Act ; Constitutional Act ; War of 1812 ; Rebellion

of 1837 ; Union Act ; Clergy Reserves ; Land Tenures—Feudal, Freehold, Leasehold, Seigniorial ; Reciprocity Treaty ; British North America Act, etc.

English History.—Biography of persons honoured as types of state or individual life—e.g.: Caractacus, Julius Cæsar, (Arthur), Alfred, Canute, William I, Simon de Montfort, Edward I, Wolsey, Elizabeth, Charles I, John Hampden, Oliver Cromwell, Marlborough, Pitt, Nelson, Wellington, Lord John Russell, Victoria, etc. Discussion of their deeds to train moral judgment and incidentally to teach patriotism and civic duty. Reading and reciting patriotic selections.

In this Standard the presentation is to be oral, no text book being prescribed. After the lesson supplementary readings should be encouraged.

Standard IV.

Canadian History.—The text book studied as a review and expansion of the topics discussed in the previous Standards.

English History.—Outline study of each people or period to exhibit its chief characteristics, e.g.: Saxons—a farmer people ; brought with them the germs of our political institutions—a limited monarchy, parliament, courts of justice, personal holdings of land ; gave us the body of our English tongue ; became Christian from choice. The presentation of this outline is to be oral. Supplementary reading in history should be encouraged.

Standard V.

Canadian History.—An intelligent comprehension of the prescribed text ; comparison of constitutional struggles in Canada with corresponding ones in England ; outline study of how we are governed—parliamentary, judicial, municipal and school systems ; our civic duties—voting, office holding, tax paying, support of law, etc.

English History.—The text book studied as a review and expansion of the topics discussed in previous Standards. Grouping of the essential facts in each period under topics indicating phases of progress, e.g.: Political, industrial, intellectual, æsthetic, religious—to show the growth of the nation.

GEOGRAPHY.

Standard I.

Direction : Position of the sun in the morning at noon, in the evening ; cardinal points of the compass ; location of important places and objects by pointing with the hand and naming the direction.

Water : Observation of forms of water such as clouds, fog, mist, rain, dew, frost, snow and ice as they occur to find the more obvious qualities and uses of each.

Winds : Recognition of calm, breeze, gale.

Standard II.

Direction : Semi cardinal points of the compass ; observation of the directions of winds bringing heat, cold, rain, snow, moisture, dryness,

Land: Hills, mountains—direction and nature of their slopes ; plain, valley, prairie ; cape, peninsula, isthmus, island ; relation of these bodies to one another ; their uses. (Teacher's reference : "How to study Geography," pp. 145-159, etc.)

Water : Fuller study of clouds, fog ; mist, rain, dew ; snow, ice, hail ; as to uses and effects of each. Effects of sun and wind on these.

Spring, brook, river—source, banks, branches, mouth—lake ; bay, sea, strait ; relation of these bodies to one another ; their uses.

Winds : Calm, breeze, gale, storm, hurricane ; effects on land and sea, on plants, animals, people, vessels.

Maps : Construction of maps of school room, school grounds, neighbourhood ; map representation of geographical objects studied.

The World as a Whole : Outline study of its form, rotation, axis, poles, equator, hemispheres ; hot, temperate and cold parts.

Continents : Their relative positions and sizes ; characteristic animals and plants in each ; occupations, habits, dress and modes of life of the leading peoples in each.

Oceans : Their relative positions and sizes ; some characteristics of each.

Standard III.

Land : Mountain chains, slopes, great plains ; description and uses of each. (Teacher's reference : "How to study Geography," p. XXV and pp. 145-147.)

Water : River systems.

Continent Structure : Great slopes, continental axis, land masses, secondary axis, great river basins, great river systems, coast lines. (Teacher's reference : "How to study Geography," pp. 13-51 and 146-152.)

The World as a Whole : Relief—World ridge from Cape Horn to Cape of Good Hope.

Lowlands : World basins—their position between the two highlands of each continent. Outline description of each.

Drainage : World water parting, world river systems.

Winds : Elementary ideas of causes and influences of trade winds, return trades, polar currents, monsoons. (Consult "Child and Nature," pp. 170-174.)

Ocean currents : Elementary ideas of causes and influences of Gulf Stream, Japan Current, and polar streams. (Consult "Child and Nature," pp. 174-176.)

Rainfall : Formation of clouds and rain ; places of much, little or no rain : reasons.

Climate : Outline study of distribution of climates. (Consult "Child and Nature," pp. 178-181.)

Productions : Chief agricultural, grazing, lumbering and mining regions. (Consult "Child and Nature," p. 185.)

People : The different races and their distribution.

NORTH AMERICA.

References for teacher's use.—Parker's "How to study Geography," pp. 185-218. King's "Methods and aids in Geography," chapters XIII-XVI. "The Story of our Continent."—Shaler.

Position.

Structure : General description of primary and secondary highlands, river basins.

Drainage : Great water partings, great river systems, great lakes.

Outline : Shape, leading projections of land and water.

Climate : Temperature and moisture—their causes and influences generally.

Natural Productions and Productive Regions : Chief agricultural, grazing, lumbering and mining regions ; surplus productions and exports ; deficiency and imports.

Waterways and Railways : Noted trade routes.

Cities : Prominent commercial centres of the continent and their relation to belts of products.

Political Divisions : Their relations to the physical structure of the continent ; capitals, forms of government, nationalities, state of civilisation.

North-West Territories : Studied generally as a review of a section of the continent ; the agricultural, grazing, lumbering and mining regions ; chief trade routes ; about a dozen towns.

Standard IV.

Dominion of Canada studied as a review, with additions, of a section of the continent of North America. Same topic as for continent study. (Teacher's reference : "The Geography of the British Colonies," by Dawson and Sutherland.)

South America. Outline study, comparing its structure, drainage, coast line ; climate and productive regions with those of North America. Political divisions—mainly Brazil, The Argentine Republic and Chili. (Teacher's reference ; "How to study Geography," pp. 218-224. The "Geographical Reader"—American Book Company.)

Eurasia. (Europe and Asia.) General structure of Eurasia compared with that of North America and that of South America. (Teacher's reference ; "How to study Geography," pp. 224-263.)

Europe. Under the same topics as North America. Comparisons.

Asia. Only a very general study of climate, natural productions and productive regions, trade routes, cities. Political divisions—mainly India, Japan and China. Comparisons.

Standard V.

Africa and Australia. Brief study of general structure ; brief comparisons of main features with those of other continents.

British Empire.

Motions of the earth, day and night—reasons ; latitude, longitude, tropics, polar circles, eclipses.

Heat, winds, ocean currents, tides, rainfall, dew, ice, glaciers, etc.

Distribution of soil, vegetation, animals, races of men, minerals ; causes.

Great commercial centres of the world, great routes of commerce.

(Teacher's reference : "How to study Geography," pp. 301-338 ; King's "Methods and Aids," chapters XVI-XVIII.)

NATURE STUDY AND AGRICULTURE.

(Teacher's reference books: Newell's "From Seed to Leaf," Goodale's "Concerning a few Common Plants," Grant Allen's "The Story of the Plants.")

To interest pupils in nature, to train them in habits of careful observation and clear expression, and to lead them to acquire useful knowledge are important aims in teaching this subject.

The pupil must study the plant, the animal and the soil rather than book descriptions of them. He may consult books after he has made his observations. The study of plant life should be emphasised in spring though not restricted to that season.

This study should be connected with language, drawing and geography.

*Standard I.**Plant Life:*

Seeds: Bean, pea, sunflower, corn, wheat.

Germination: its conditions—light, air, moisture, soil, warmth.

Structure: covering, cotyledons, embryo.

Seedlings: Parts—stems, roots, leaves.

Buds: Poplar, willow, maple, elm, spruce.

Covering, unfolding, arrangement on stem.

Animal Life: Cat, dog, cow, horse, sheep, hen, fish.

Covering, food, uses.

*Standard II.**Plant Life:*

Seeds: Fuller study of the germination, growth and structure of seeds selected from Standard I.

Plant structure: Herbs, shrubs, trees.

Stem: Its parts—wood, bark, pith; their uses.

Root: Its parts—primary root, rootlets, root hairs; their uses.

Leaf: Its parts—stipules, stock, blade, veins; their uses.

Fruits: Apple, orange or lemon, plum or cherry, pumpkin or squash, raspberry or strawberry; the uses of their parts to the plant and to man.

Animal Life: Fuller study of the animals selected for Standard I, including structure of feet, head and teeth; relation of structure and habits.

*Standard III.**Plant Life:*

Leaves: Their position, arrangement, form, and venation; their relation to sunlight, air and direction of water to roots.

Flowers: Silverweed, anemone, rose, violet, everlasting pea, sunflower, wild bergamot; arrangement and uses of their parts.

Roots: Wheat, willow, carrot, turnip, radish, potato. Their forms, and the uses of their parts to the plant and to man.

Soils: Outline study of formation, composition, classification, exhaustion, restoration. (Public School "Agriculture," chapter III.)

Animal Life: Ant, fly, grasshopper; hawk, crane, duck; gopher, wolf, muskrat—adaptation of their forms and structure to their modes of life.

Standard IV.

Plants : Their food—its sources, how taken up, how assimilated ; their reproduction, propagation ; dissemination of seeds.

Weeds : Bindweed or wild buckwheat, tumbleweed, hedge mustard, stinkweed, Russian thistle ; methods of destroying. (“Agriculture,” chapter XII.)

Trees : Their cultivation for shade, ornament and protection. (“Agriculture,” chapter XIX.)

Soils : Preparation of for seed. (“Agriculture,” chapter VI.)

Animals : Feeding, care and management of horses, cattle, sheep and swine. (“Agriculture,” chapter XIV.)

Insects : Growth, classification, remedies. (“Agriculture,” chapter XII.)

Standard V.

Tillage : . Drainage, fertilisers, subsoiling. (“Agriculture,” chapter V.)

Crops : Their growth, management, rotation ; diseases, remedies ; soiling crops. (“Agriculture,” chapters VII, VIII, IX, XI.)

Animals : Principles of feeding. (“Agriculture,” chapter XIII.)

Dairying : (“Agriculture,” chapter XVII.)

ARITHMETIC.

Every new thought process in this subject should be developed objectively. Principles and rules should be arrived at inductively. Accuracy and rapidity in the simple fundamental processes are important.

Problems should, so far as possible, have due relations to the demands of modern commercial and business life. Clearness of reasoning, accuracy of statement and elegance of form in the solutions of problems should be emphasised. Pupils should have regular practice in the construction of problems. The subject matter of nature study, agriculture, geography, etc., furnishes interesting data for many problems.

Standard I.

(Teacher's reference : Wentworth's “Primary Arithmetic.”)

Part I.

Numbers 1 to 12—their combinations and separation, oral and written ; the making and use of arithmetical signs.

Making and showing relation of one-half, one-fourth, one-eighth ; one-third, one-sixth ; one-fifth, one-tenth ; one-third, one-ninth, one-twelfth ; one-seventh ; one-eleventh (Objective illustration—no figures used).

Use and relation of pint, quart, gallon, peck, bushel ; inch, foot, yard ; day, week, month, year ; five cent and ten cent coins ; simple problems.

Part II.

Numbers 1 to 25—their combinations and separations.

Use and meaning of one-thirteenth one-twenty-fifth ; review of fractions in Part I.

Use and relation of ounce, pound ; hour, day ; foot, rod ; sheet, quire.

Counting to and from 25 by ones, twos, threes, etc. Drill in rapid figure work (especially in addition) involving combinations in the numbers 1 to 10. Reading Roman notation to XXV. Inventing and solving simple problems.

Standard II.

(Teacher's reference : Wentworth's "Primary Arithmetic.")

Numbers 25 to 100. Addition, subtraction, multiplication and division.

Use and meaning of one-twenty-sixth one-one-hundredth.

Addition, subtraction, multiplication and division of fractions studied in Part I.

Percentage : Use and meaning of 50%, 25%, 10%, 5%, 33 $\frac{1}{3}$ %, 12 $\frac{1}{2}$ % ; relation to fractions.

Use and meaning of pound, bushel, square inch, square foot, square yard ; finding area of small surfaces.

Counting to and from 100 by ones, twos, etc., to tens ; multiplication table made and mastered. Oral and written drill in rapid figure work (especially in addition) involving the combinations in the numbers 1 to 25. Reading Roman notation to C. Inventing and solving simple problems suggested by any subject studied.

Standard III.

Notation and numeration ; simple rules.

Common fractions : Addition, subtraction, multiplication and division of fractions whose denominators do not exceed one thousand. Common factor and common divisor as needed in fractions.

Decimal fractions : Addition, subtraction, multiplication and division to tenths, hundredths and thousandths ; relation to common fractions.

Percentage : Easy problems in simple interest, and profit and loss, using such applications as occur in ordinary mercantile business.

Remaining weight and measures used in practical life, taught and applied ; measurement of surfaces and right angled triangles ; contents of rooms, boxes, lumber, piles of wood and hay.

Oral and written drill in the figure work of the simple rules to secure accuracy and rapidity.

Standard IV.

Common fractions. Decimal fractions, omitting recurring decimals.

Simple interest, profit and loss, commercial discount, commission. Problems should be confined to cases occurring in ordinary mercantile business.

Standard V.

Ratio and simple proportion with their applications to partnerships ; square root.

Mensuration : Chapters VII to IX, inclusive, in Hill's "Lessons in Geometry."

Geometry : Hill's "Lessons in Geometry."

At first the pupil should discover geometrical truths through measurement, drawing, construction and superposition rather than logical demonstration. In demonstrations, clearness of reasoning, accuracy of statement, and elegance of form should be emphasised. "The subject matter of each lesson should be considered in its relation to life, that is the actual occurrence, in nature and in the structure of machines made by man, of the geometrical forms studied ; and the application of the propositions to the ordinary affairs of life should be the basis and the outcome of every exercise."

Algebra : First 100 exercises in Clarkson's "Public School Algebra." —Scholar's edition.

DRAWING (PROVISIONAL COURSE.)

(Teacher's reference : The Prang Primary Course in Art Education --Parts I and II by Hicks and Locke.)

Drawing is to be taught as an added means of expression. Pupils are to draw in blank books after observing the type solids and objects.

Standard I.

Teach the following forms as wholes from type solids and objects :

Sphere and similar forms, natural and artificial, e.g., ball, marble, apple, tomato, cherry, lemon, etc.

Cylinder and similar forms, natural and artificial, e.g., pencil, bottle, spool, pint measure, cup, rope, ladder, mallet, etc.

Cube and similar forms, natural and artificial, e.g., box, chest, basket, inkstand, lumps of sugar, etc.

Teach their parts—surfaces, faces, edges, and corners, and the relation of these parts : compare them.

Illustrative sketching in connection with nature study.

Standards II and III.

The work of Standard I and the following :

The type solids bisected and studied as new wholes.

Hemisphere and similar forms, natural and artificial, e.g., half an apple, dish, bowl, cap, oil can, etc.

Half cylinder and similar forms, natural and artificial, e.g., bandbox, coin, etc.

Half cube, square prism, right angled triangular prism, and similar forms, natural and artificial, e.g., box, trunk, car, roof of a house, etc.

Teach their parts—surfaces, faces, edges and corners, and the relation of the parts. Compare them.

Teach geometric figures—triangle, square and rectangle from the solid. Draw objects based on these figures, e.g., pennant, envelope, door, cross, flag, etc.

Illustrative sketching in connection with nature study.

Standards IV and V.

The work of previous Standards, and forms derived from the type solids by variation.

Spheroid, ellipsoid, ovoid and similar forms, natural and artificial, e.g., lemon, cucumber, watermelon, egg, hops, pear, strawberry, vase, etc.

Cone, circular frustrum, and similar forms, natural and artificial, e.g., carrot, volcano, mountain peak, hour glass, wine glass, etc.

Pyramid, square frustrum, and similar forms, natural and artificial, e.g., cupolas, pyramids of Egypt, basket, etc.

Draw, from the solids, the geometric figures, circle, ellipse and oval and learn the terms circumference, diameter, radius, arc, centre, focus, axis. Draw objects based on these figures, e.g., target, circular window, hand mirror, eye glasses, horse shoe, padlock, fan, spoon, etc.

Illustrative sketching in connection with other studies.

MUSIC.

Standard I.

Singing of rote songs clearly and sweetly. Drill on the scale, and intervals such as are found in exercises 1, 2, 3 and 4 on the second page of the First Series of Charts (Normal Music Course.) Exercises in time given with the time names and the metronome.

Standard II.

The First Chart completed. Easy exercises in each of the keys G, D, A, E \flat , A \flat , B \flat and F—such as are found in Part I, First Reader. Continued exercises in time—such as are found in First Rythmic Chart (Undivided Pulsations.)

Standard III.

First Reader, Part I, completed. Reading music in Parts II and III of First Reader. Time exercises continued.

Standard IV.

First Reader completed. Special attention given to two part songs and exercises. (Each pupil should be able to sing either a soprano or alto part.) The Second Series of Charts and Second Reader commenced. Time work on First Rythmic Chart completed, and Second Rythmic Chart (Divided Pulsations) commenced.

Standard V.

Second Series of Charts, Second Reader and Second Rythmic Chart completed.

HYGIENE—PHYSIOLOGY.

(Teacher's reference: Ontario Manual of Hygiene or Ontario Public School Physiology and Temperance.)

For convenience in teaching these subjects the ungraded school may be divided into two sections, the first comprising the pupils in Standards I and II and the second those in Standards III, IV and V. Practical effect should be given to the instruction in this subject by attention to the physical condition and habits of the children, the ventilation, lighting,

heating and cleaning of the school room, and the supervision by the teacher of the sports and gymnastic exercises of the pupils.

Topics : Lessons on cleanliness, proper clothing, pure air, good water, exercise, rest, avoidance of draughts, wholesome food, temperate habits, bathing, accidents, poison, disinfectants, digestion, circulation, respiration, care of the eye and ear.

STIMULANTS AND NARCOTICS WITH SPECIAL REFERENCE TO THE USE OF ALCOHOL AND TOBACCO.

The great purpose is to build up in the mind a theory of self control and a willingness to abstain from acts that may grow into dangerous habits. The moral and social effects should be made prominent and abstinence be inculcated from higher ends than such as concern only the body. Technicalities and persistent dwelling upon details of disease should be avoided. Special delicacy of treatment is needed in those unfortunate cases in which children find themselves between the safe teaching of the school and the counter practices and influences of the home. Refrain from assertions of what is uncertain or sincerely doubted by high authority, or likely to be repudiated by the pupil when he is mature enough to judge for himself, since the admitted and unquestioned facts about the more dangerous stimulants and narcotics, the alcoholic drinks in particular, furnish invincible reasons why people in general should do without them, and young people above all others.

Teach what a stimulant is, what a narcotic is and what each may cause ; effects of alcohol on the digestive, circulatory, muscular and nervous system.

Teach that tobacco contains a poisonous substance called nicotine, that it frequently injures the throat, lungs, heart and other organs in adults, that it is far more harmful to young and growing persons than to adults, that it is particularly objectionable in the form of a cigarette, that children should avoid it in all its forms, and that the more sparingly grown people use it, the better, as a rule, they are off.

MANNERS AND MORALS.

(Teacher's reference : White's School Management, pp. 218-294.)

Ungraded schools may be divided as in hygiene when direct instruction is given.

It is the duty of the teacher to see that the pupil practices those external forms of conduct which express a true sense of the proprieties of life and that politeness which denotes a genuine respect for the wants and wishes of others. It is his duty to turn the attention of the pupils to the moral quality of their acts and to lead them into a clear understanding and constant practice of every virtue. His own influence and example ; the narration of suitable tales to awaken right feeling ; the memorising of gems embodying noble sentiments, and maxims and proverbs containing rules of duty ; direct instruction, etc., are means to be employed.

Topics : Cleanliness and neatness, politeness, gentleness, kindness to others, kindness to animals, love, truthfulness, fidelity in duty, obedience, nobility, respect and reverence, gratitude and thankfulness, forgiveness, confession, honesty, honour, courage, humility, self respect, self control, prudence, good name, good manners, temperance, health, evil habits, bad language, evil speaking, industry, economy.

APPENDIX E.

REGULATIONS OF THE COUNCIL OF PUBLIC INSTRUCTION GOVERNING TEACHERS'
CERTIFICATES AND PUBLIC SCHOOL LEAVING EXAMINATIONS.*Certificates.*

The teachers' certificates granted by the Council of Public Instruction shall be denominated Third Class, Second Class, First Class and High School certificates. These may be obtained by fulfilling the following conditions—

- (a) Furnishing a certificate of moral character of recent date.
- (b) Passing the prescribed nonprofessional examination.
- (c) Passing the prescribed professional examination.
- (d) Receiving a satisfactory report from an inspector after having taught one year in these Territories on an interim certificate.

2. Certificates of the Third Class shall be valid for three years. All other certificates shall be valid during the pleasure of the Council.

 NONPROFESSIONAL EXAMINATION.
Third Class.

1. *Spelling and Writing*.—Judged on all papers.

2. *English Grammar and Rhetoric*.—A general knowledge of the High School Grammar. Choice of words, structure of sentences and paragraphs, simple forms of narration and description, punctuation.

Text-book.—Composition from Models (revised edition) pp. 1-206 and appendix.

3. *Composition*.—Short compositions on not more than three subjects based upon the selections in literature. It is not the extent of the candidate's knowledge about the selected subjects so much as his ability to say a few things about them in a simple, clear and orderly way, that is the test. Legible writing and correct spelling, punctuation and paragraphing will be regarded as indispensable.

4. *Prose Literature*.—The prescribed work is to be studied with reference to—

(a) Content : Outline of story, characters and leading events, pictures of life and manners, central idea and purpose of story.

(b) Method : (1) Structure of the plot ; relation of characters and events to plot and purpose ; climax ; unity and coherence of details ; how interest is sustained. (2) Mode of telling the story—By descriptions, direct or indirect narration, reflections, analyses of characters, motives and events.

(c) Language : General characteristics of the author's style.

(d) Place : Place of the work in literary history, circumstances of production, outline of the life of the author.

All details are to be considered not as ends in themselves but as means to a comprehension of the whole.

Prescribed work, 1901 : Scott's "Ivanhoe."

Recommended for teacher's reference.—Edition by Bliss Perry, in Longman's English Classics.

5. *Poetical Literature*.—Intelligent comprehension of and familiarity with the prescribed selections ; memorisation of the finest passages ; oral reading.

Prescribed selections, 1901 : Longfellow—Evangeline, A Psalm of Life, Wreck of the Hesperus, The Day is Done, The Old Clock on the Stairs, The Fire of Driftwood, Resignation, The Warden of the Cinque Ports, Excelsior, The Bridge, A Gleam of Sunshine.

Wordsworth (Palgrave's Golden Treasury of Songs and Lyrics)—The Education of Nature, (Three Years She Grew,) She was a Phantom of Delight, A Lesson, (There is a Flower, the Lesser Celandine,) To the Skylark, The Green Linnet, To the Cuckoo, To the Daisy, and the following sonnets : To a Distant Friend, (Why Art Thou Silent,) England and Switzerland, (Two Voices are There.) Milton ! Thou Should'st be Living at this Hour, Westminster Bridge, The Inner Vision, ("Most Sweet it is with Unmuffled Eyes,") "O Friend ! I Know Not Which Way I Must Look," To Sleep, Within King's College Chapel.

6. *History*.—The leading events of Canadian and British History.

Text books.—Clement's History of Canada ; Buckley and Robertson's High School History.

7. *Geography*.—The general geography—physical, commercial and mathematical—of the world ; geography of Canada and the British Empire more particularly.

Text books.—The New Canadian Geography—North-West edition ; Geography of the British Colonies by Dawson and Sutherland, McMillan and Co.

8. *Arithmetic and Mensuration*.—Pure arithmetic ; commercial arithmetic.

Text books.—Hamblin Smith's Arithmetic to the end of chapter XXVI ; also chapters XXXIII and XXXIV. For mensuration consult Hill's Lessons in Geometry, chapters VII to IX inclusive.

9. *Algebra*.—Definitions, elementary rules, simple equations of one, two and three unknown quantities, problems, factors, H.C.F., L.C.M.

Text book.—C. Smith's Elementary Algebra, chapters I to XI inclusive.

10. *Geometry*.—Hill's Lessons in Geometry, chapters I to VI inclusive. Euclid's Elements, Book I, with easy deductions—Todhunter and Loney's edition.

11. *Book-keeping*.—McLean's High School Book Keeping, chapters I to V inclusive, and chapters VIII to X.

12. *Botany and Agriculture*.—Elements of structural botany.

The course in third class botany shall be practical and descriptive, deal with plant functions and life relations, and cover the following—

The flower—its parts, their functions and relations as observed in the actual study of specimens of the following orders : Ranunculaceæ, cruciferae, leguminosæ, rosaceæ and liliaceæ.

The classification of members of these orders as to their genera.

The leaf in vernation, venation, phyllotaxis, surface, margin, outline, base, apex and function.

Aestivation—foliage buds, flower buds.

Inflorescence—determinate and indeterminate.

Flower—perfectness, completeness, symmetry, regularity.

The simple study of fruits and their classification as apocarpous and syncarpous, dehiscent and indehiscent.

The simple study of the root and stem, with drawings of cross sections and branch systems.

Pollination, fertilisation and the development of the seed from the ovule.

The study of modified branches, stems, leaves and flowers.

Germination, illustrating the growth of the seed and conditions.

Nutrition—food, digestion, assimilation, respiration and transpiration.

A plant shall be submitted at the examination, not necessarily for purposes of identification, but as a means of testing the candidate's practical knowledge of this subject. Simple drawings may be required.

Text book.—Spotton's High School Botany—Manitoba edition.

Books of reference for teachers—Coulter's Plant Relations (D. Appleton and Co.), Newell's Outlines of Lessons in Botany, Part I (Ginn and Co.)

Agriculture.—Definitions, plants, soils, tillage, crops, weeds, insects, birds.

Text book.—The First Principles of Agriculture, (Mills and Shaw) chapters I to XII inclusive.

13. *Physics*.—The course in this subject shall cover the following—

(a) Metric and English systems of measures.

(b) Matter : Solid, fluid (liquid, gas), constitution of matter.

(c) Properties and laws of solids : Hardness, ductility, malleability, plasticity, cohesion, adhesion, elasticity, structure (crystalline and amorphous).

(d) Properties and laws of liquids : Fluidity ; viscosity ; cohesion ; adhesion ; capillary phenomena ; surface tension ; transmission of pressure by fluids ; pressure due to weight ; surface of a liquid at rest under the action of gravity ; buoyancy.

(e) Properties and laws of gases : Pressure due to weight ; expansion force (tension or elastic force) ; buoyancy ; measurements of the pressure of the atmosphere, barometer ; compressibility ; Boyle's or Mariotte's Law.

(f) Construction and action of the following instruments and machines : Air pump (common and Sprengel), condenser, common pump, force pump, siphon, hydrostatic press.

(g) Specific gravity and density of a solid, liquid and gas.

(h) Relative motion and absolute rest.

(i) { Force : Definition ; recognition ; manifestations ; measurement ; stress, action, reaction ; molar and molecular forces ; moment of a force ; unit of force and mass.

{ Energy : Definition ; relation to force ; various forms potential and kinetic.

{ Work : Definitions ; relation to energy and force ; wasted work ; unit ; estimation of work done.

(j) Newton's Three Laws of motion and their application to universal gravitation ; equilibrium of bodies.

(k) Machines : Uses, advantages, laws ; levers, balance, inclined plane, pulleys.

(l) Heat : Nature and sources ; expansion of solids, liquids, gases ; measurement of heat ; construction and use of thermometers ; maximum

density of water. **Change of state**—solid to liquid and liquid to solid ; vaporisation and liquefaction ; ebullition, evaporation, dew point. Transmission of heat—conduction, convection, radiation.

(*m*) Transformation, correlation and conservation of energy.

Text book.—Gage's introduction to physical science.

14. *Drawing*.—(1) Representation : Drawing from type solids and objects. (*a*) The sphere and similar forms natural and artificial as a ball, apple, tomato, lemon, etc. (*b*) The cube and similar forms as a box, basket, inkstand, etc. (*c*) The cylinder and similar forms as a pencil, bottle, spool, pint measure, ladder, etc. (*d*) The type solids bisected—hemisphere, half cube, half cylinder and similar forms.

(2) Object drawing : Sketching in connection with nature study, etc.

(3) Construction : Views, working drawings, designs, patterns.

(4) Decoration : Repetition around a centre, e.g., rosette to cover a surface ; along a line, e.g., a border to limit a surface. Historic ornament—simpler forms.

Text book.—The Prang Course in Drawing for Ungraded Schools.

Reference book.—The teacher's manual for the Prang Course in Drawing for Ungraded Schools.

Second Class.

1. *Spelling and writing*.—Judged on all papers.

2. *English Grammar and Rhetoric*.—The High School Grammar—revised edition. Choice of words, structure of sentences and paragraphs, simple forms of narration, description and exposition, punctuation.

Text book.—Composition from Models (revised edition) pp. 1-347 and Appendix.

3. *Composition*.—Short compositions on not more than three subjects based upon the selections in literature. It is not the extent of the candidate's knowledge about the selected subjects so much as his ability to say a few things about them in a simple, clear and orderly way, that is the test. Legible writing and correct spelling, punctuation and paragraphing will be regarded as indispensable.

4. *Prose Literature*.—The prescribed work is to be studied with reference to—

(*a*) Content : Outline of story, characters and leading events, pictures of life and manners, central idea and purpose of story.

(*b*) Method : (1) Structure of the plot ; relations of characters, events and incidents to plot and purpose ; climax ; unity and coherence of details ; how interest is sustained. (2) Mode of telling the story : By descriptions, direct and indirect narration, reflections, analyses of characters, motives and events.

(*c*) Language : General characteristics of author's style. Use of words—Anglo-Saxon or classical, short or long, specific or generic ; characteristic sentence structure ; paragraphing, sources of figures of speech ; use of humor, pathos, etc.

(*d*) Place : Place of the work in literary history, circumstances of production, outline of the life of the author.

All details are to be considered not as ends in themselves but as means to a comprehension of the whole.

Prescribed work, 1901: George Eliot's "Silas Marner." Riverside Literature Series No. 83.

Recommended for teacher's reference.—Edition by Robert Herrick, in Longman's English Classics.

5. *Poetical Literature*.—Intelligent, appreciative comprehension of and familiarity with prescribed selections; memorisation of the finest passages; oral reading.

Prescribed selections, 1901: Tennyson.—Elaine, Lady of Shalott, St. Agnes' Eve, Sir Galahad, Lotos Eaters, Ulysses, Crossing the Bar, Early Spring, "You Ask me Why," "Of Old Sat Freedom," "Love Thou Thy Land," the six interlude songs and "Tears, Idle Tears," in "The Princess."

6. *History*.—(a) British: Great Britain from the Revolution of 1688 to the present, with the outline of the previous periods of British History. Text book.—Green's Short History of the English people.

(b) Canadian: Clement's History of Canada.

(c) General: Swinton's Outlines of the World's History (Sections I, II, III).

7. *Geography*.—The commercial and physical geography of America and Europe. The geography of the British Empire.

Text books.—Geography of the British Colonies by Dawson and Sutherland. Elementary Physical Geography by R. S. Tarr (McMillan Co.)

8. *Arithmetic and Mensuration*.—Arithmetic in theory and practice, area and volume of rectilinear figures, circles, spheres, cylinders, cones.

Text books.—Hamblin Smith's Arithmetic. For mensuration refer to Thompson, Ballard and McKay's High School Arithmetic—Ontario series.

9. *Algebra*.—Definitions, elementary rules, simple equations of one, two and three unknown quantities, problems, factoring, highest common factors, lowest common multiples, fractions, equations with fractions, quadratic equations, simultaneous equations of the second degree, powers and roots, indices, surds.

Text book.—C. Smith's Elementary Algebra, chapters I to XX inclusive.

10. *Geometry*.—Euclid, Books I, II and III; deductions.

Text book.—Todhunter and Loney's Euclid.

11. *Book Keeping*.—As for Third Class. (Candidates for Second Class who have passed the Third Class examination in [these] Territories since 1st January, 1893, are not required to take this subject.)

12. *Physics*.—The elements of physics.

Text book.—Gage's Introduction to Physical Science. (Ginn and Co.)

13. *Agricultural and Botany*.—Plants, soil, tillage, crops, weeds, insects, birds, feeding, care and management of animals, dairying, cultivation of trees.

Text book.—The First Principles of Agriculture, by Mills and Shaw. Botany.—Topics as for Third Class.

14. *Drawing*.—Topics as for Third Class.

FIRST CLASS.

1. *Spelling and Writing*.—Judged on all papers.
2. *The English Language*.—(a) Grammar and Rhetoric. The High School Grammar, revised edition; Genung's Practical Elements of Rhetoric and the study in connection therewith of the following selections from Genung's Handbook of Rhetorical Analysis: 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 21, 22, 23, 24, 26. One paper.
(b) Lounsbury's English Language, Part I, revised edition and Gummere's Handbook of Poetics, the first six chapters. One paper.
3. *Composition*.—Short compositions on not more than three subjects based upon the selections in literature.
4. *Prose Literature*.—George Eliot's "Silas Marner" (See Second Class).
5. *Poetical Literature*.—Shakespeare: Julius Cæsar, The Tempest. Milton.—L'Allegro, Il Penseroso, Comus, Lycidas, On his being arrived to the age of twenty-three, To the Lord General Fairfax, To the Lord General Cromwell, To Sir Henry Vane the Younger, On his Blindness. (Riverside Literature Series No. 72.)
Tennyson—As for Second Class.
6. *History*.—Swinton: Outlines of the World's History—(American Book Company).
Bagehot: The English Constitution—(Kegan, Paul, Trench and Co.)
Bourinot: Constitutional History of Canada—(Dawson Bros., Montreal.)
7. *Biology*.—A practical examination, including tests with the microscope, shall be held in connection with this subject.
Text book.—General Biology, Sedgwick and Wilson (American Science Series—Henry Holt and Co.)
8. *Algebra*.—C. Smith's Elementary Algebra.
9. *Geometry*.—Books I, II, III, IV; definitions of Book V; propositions 1, 2, 3, A, 4, 33 of Book VI; deductions.
Text book.—Todhunter and Loney.
10. *Trigonometry*.—Text book.—Plane Trigonometry and Tables—D. A. Murray (Longman's.)
11. *Chemistry*.—Text book—Kirkland's Experimental Chemistry. (Gage and Co.)
12. *Botany and Agriculture*.—Elements of structural botany. (Candidates for First Class who have passed the Second Class Examination in these Territories since 1st January, 1895, are not required to take this subject.)
Text book.—Spotton's High School Botany—Manitoba edition. The First Principles of Agriculture by Mills and Shaw.
Reference.—Coulter's Plant Relations.
13. *Physics*.—The Elements of Physics.
Text book.—Gage's "Introduction to Physical Science."

14. *Drawing*.—Topics as for Third Class.

Marks Required to Pass.

Candidates must obtain at least 34 per cent. on each subject, and 50 per cent. on the total number of marks.

If any subject is divided for the purpose of examination, candidates must obtain at least 34 per cent. on each subdivision.

PROFESSIONAL EXAMINATION.

(To be held at the close of the Normal School Session.)

Third Class.

1. *The Science of Education*.—The nature and aim of education, teaching and instruction; outline of helpful portions of mental science; application of the principles derived therefrom to teaching and government.

2. *The Art of Education*.—Methods of teaching each subject on the programme of studies for schools; school organisation; school management; school hygiene; duties of teachers and pupils as set forth in The School Ordinance and Regulations. Practice in teaching.

Text books.—Garlick's New Manual of Method, White's Elements of Pedagogy; Ontario Manual of Hygiene, chapters 1, 2, 3, 4, 5, 10, 11, 12, 13, 14, 15, 22; The Prang Course in Drawing for Ungraded Schools; The Normal Music Course First Reader, new and enlarged edition (Silver, Burdett and Co.)

Candidates will be required during the second week of the session to pass an examination on Tilley's Methods in Teaching (Morang.)

Second Class.

1. *The Science of Education*.—The nature and aim of education, teaching and instruction; psychology and ethics as the scientific basis of the art of education; their application to the development of the intellectual and moral powers.

2. *The Art of Education*.—Outlines of general method; application to the teaching of each subject on the programme of studies; school organisation; school management; school hygiene; school law; practice in teaching.

3. *The History of Education*.—Systems and theories of education; eminent educators.

Text books.—Dexter and Garlick's Psychology in the School Room (Longman's), Landon's Teaching and Class Management, White's School Management, The Report of the Committee of Five, Manual of Hygiene, School Ordinance, The Prang Course in Drawing for Ungraded Schools, The Normal Music Course First Reader, new and enlarged edition. Lectures.

References for History of Education.—Browning's Educational Theories and Quick's Educational Reformers (Appleton's edition, 1891),

Candidates will be required during the second week of the session to pass an examination on Fitch's Lectures on Teaching.

First Class.

1. *The Science of Education*.—Nature, form and limits of education ; development and training of man ; education values ; psychological and logical sequence of subjects ; general method.

2. *The Art of Education*.—Application of principles derived from the science of education to the teaching of each subject on the programme of studies ; school organisation ; school management ; school law ; practice in teaching.

3. *The History of Education*.—Systems and theories of education ; eminent educators.

Text books.—Rosenkranz' Philosophy of Education, Sully's Handbook of Psychology (revised edition), De Garmo's Essentials of Method (revised edition), Landon's Teaching and Class Management, White's School Management, Laurie's Lectures on Linguistic Method, Herbert Spencer's Education, Report of the Committee of Ten, The Prang Course in Drawing for Ungraded Schools, The Normal Music Course First Reader, new and enlarged edition.

Candidates in attendance will be required during the second week of the session to pass an examination on Fitch's Lectures on teaching.

HIGH SCHOOL CERTIFICATE.

(Head Master.)

1. To have the degree of Bachelor of Arts from some university in His Majesty's Dominions, and

2. To have a professional certificate of the first class.

Persons holding a professional certificate of the first class, or a High School Assistant's certificate, obtained after a course at an approved school of pedagogy, may teach in a high school, but not as head master.

NOTE—A certificate from a school of pedagogy is not valid as a licence to supervise or teach in other than high schools.

GENERAL.

1. The examinations of candidates for teachers' nonprofessional certificates shall commence on the first Monday of July in each year at such places as the Council of Public Instruction may announce.

2. No male under eighteen years of age, nor female under sixteen shall be allowed to write at these examinations.

3. Each candidate shall notify the Secretary of the Council of Public Instruction, not later than June 1st, of the class of certificate for which he is an applicant and the place at which he desires to write. Each such notice shall be accompanied by a fee of \$3.00

4. Males under eighteen years of age, and females under sixteen, who desire to test their scholarship, may, upon payment of a fee of \$5.00,

write with the candidates for teachers' nonprofessional certificates. A statement of the marks awarded will be given them, but this statement will not be accepted as the equivalent of a certificate when the age limit has been attained.

5. A nonprofessional certificate shall not be valid as a licence to teach.

6. The sessions of the Normal School shall be held as follows : For third class candidates—December 1st till February 28th; for second class candidates—September 1st till December 22nd; for first class candidates—September 1st till December 22nd.

Only those holding nonprofessional certificates are admitted. Candidates failing to present themselves on the first day of the session forfeit their right to attend.

Candidates who have previously taken the training prescribed for second class are permitted to write on the final examinations for first class without attendance during the session.

Persons whose teaching has been favourably reported on by an inspector, but whose third class professional certificates have expired, may with the permission of the Council, renew these by passing the prescribed nonprofessional examination for third class and an additional examination based on Lloyd Morgan's *Psychology for Teachers* (Scribners) and Landon's *Teaching and Class Management*.

PERSONS ELIGIBLE WITHOUT EXAMINATION.

1. A person who holds a certificate, other than third class, issued since 1st January, 1886, in any province of the Dominion or in the British Islands, and presents (*a*) a statement from the Department of Education in his province that his certificate is still valid, (*b*) a certificate of moral character of recent date, (*c*) a certificate from his last inspector of having taught successfully, may receive a certificate of such class as the Council of Public Instruction may deem him entitled to.

2. Graduates in any university in His Majesty's Dominions may, on the presentation of proofs of scholarship, character and age, receive non-professional certificates of the first class.

3. Persons holding certificates of educational value from institutions other than those mentioned may receive such certificates as the Council of Public Instruction may deem them entitled to.

REGULATIONS OF THE COUNCIL OF PUBLIC INSTRUCTION GOVERNING PUBLIC SCHOOL LEAVING EXAMINATIONS.

The Public School Leaving Examination is held during the last week in June. Teachers must notify the Secretary of the Council not later than June 1st of the number of candidates they will present. Applicants will write in their own schools. There is no fee for this examination.

The following is the limit of studies in the different subjects prescribed for the Public School Leaving Examination (Standard V) :

Poetical Literature.—Intelligent comprehension of and familiarity with the following selections from the High School Reader, with

memorisation of the finest passages and oral reading : From the "Essay on Man," To a Highland Girl, The Glove and the Lions, The Cloud, The Bridge of Sighs, David Swan—A Fantasy, To the Evening Wind, Each and All, The Island of the Scots, The Hanging of the Crane, Sonnets (Heavysege), Dr. Arnold at Rugby, From "The Mill on the Floss," The Lord of Burleigh, "Break, Break, Break," Sonnett (Wilson), Rugby Chapel, Character of Cromwell, The Return of the Swallows, To Winter.

Composition.—The structure of the paragraph and sentence; the abstract, paraphrase and theme; social and business letters. Candidates will be required to write a short composition on some familiar subject.

History.—The leading events of Canadian History with particular attention to events subsequent to 1841; the outlines of English History.

Geography.—The general geography of the world; geography of Canada more particularly.

Algebra and Geometry.—First one hundred exercises in Clarkson's "Public School Algebra;" first six chapters in Hill's "Lessons in Geometry." For Public School Leaving Examination, candidates must provide themselves with ruler and compasses.

Hygiene and Temperance.—The topics named in the Programme of Studies.

Orthoepy and Spelling.

Grammar.

Nature Study and Agriculture.

Arithmetic.

} The work prescribed for Standard V
in the Programme of Studies.

Mensuration.—Areas as in chapter VII, Hill's "Lessons in Geometry."

Drawing.—(1) Representation : Drawing from type solids and objects.
(a) The sphere and similar forms natural and artificial as a ball, apple, tomato, lemon, etc. (b) The cube and similar forms as a box, basket, inkstand, etc. (c) The cylinder and similar forms as a pencil, bottle, spool, pint measure, ladder, etc.

(2) Object Drawing : Sketching in connection with nature study, etc.

(3) Construction : Views, working drawings, designs, patterns.

(4) Decoration : Repetition around a centre, e.g., rosette to cover a surface; along a line, e.g., a border to limit a surface. Historic ornament—simpler forms.

Text book.—The Prang Course in Drawing for Ungraded Schools.

Reference book.—The Teacher's Manual for the Prang Course in Drawing for Ungraded Schools.

NOTE.—"The work in each Standard includes a review of the essentials in previous Standards."—*Extract from Programme.*

The marks for writing are awarded on the composition or letter in the composition paper.

Two marks are deducted for each misspelled word on the spelling paper and one mark for each misspelled word on the other papers.

Candidates must obtain at least thirty-four per cent. on each paper and fifty per cent. on the total in order to pass.

Only persons who pass this examination, or have already passed the former Entrance Examination in the Territories, can be ranked, for grant purposes, as pupils in High School Standards.

APPENDIX F.

TEXT BOOKS AUTHORISED FOR USE IN SCHOOLS.

Standards I—V.

Readers : Ontario series—First Reader (Part I, Part II), Second, Third, Fourth and High School Reader.

Dominion Readers.—Optional for Roman Catholic Separate Schools—First Reader (Part I, Part II), Second Reader.

Bilingual Series.—Optional in schools where French is the vernacular—First Reader (Part I, Part II), Second Reader. (Copp, Clark Co.)

Supplementary.—Their use is optional in all schools—Standard I : Part I—Appleton's First Reader. Part II—*Sea Side and Wayside, No. 1. (Animal life). *Bass' Nature Stories for Young Readers (Plant life). †Scudder's Verse and Prose for Beginners, No. 59. Standard II : *Sea Side and Way Side, No. 2. †Fables and Folk Stories, Parts I and II, Nos. 47, 48. Standard III : *Sea Side and Way Side, No. 3. †Selections from Child Life in Poetry, No. 70. Standard IV : †John Burrough's Birds and Bees, No. 28. †Dickens' Christmas Carol, No. 57.

Copy Books.—Gage's Practical System of Vertical Writing.

Arithmetic.—Elementary Arithmetic by Kirkland and Scott, revised and enlarged edition (The W. J. Gage Co.) The Public School Arithmetic, till December 31, 1900.

Grammar.—The Public School Grammar by Strang, till June 30, 1901.

History.—Buckley and Robertson's History of England ; Clement's History of Canada.

Geography.—The New Canadian Geography—North-West Territories edition (The W. J. Gage Co.).

Agriculture.—Agriculture by C. C. James. (Geo. N. Morang.)

Geometry.—Hill's Lessons in Geometry. (Ginn and Co.)

Algebra.—Clarkson's Public School Algebra.

Drawing.—The Prang Course in Drawing for Ungraded Schools.

Music.—The Normal Music Course—First and Second Readers revised and enlarged. First Series of Charts, Second Series of Charts (Silver, Burdett and Co.)

Standard VI—VIII.—(High School Standards.)

Grammar.—The High School Grammar, Lounsbury's English Language.

Composition.—Genung's Practical Elements of Rhetoric, Genung's Handbook of Rhetorical Analysis, Alexander and Libby's Compositions from Models.

Literature.—Poetical—Prescribed Selections for each Standard.

Prose—Prescribed Selections for each Standard.

*D. C. Heath and Co., Publishers, Boston.

†Houghton, Mifflin and Co., Publishers, Riverside Literature Series, Boston.

History.—English—Buckley's and Robertson's History of England and Green's Short History of the English People.

Canadian—Clement's History of the Dominion of Canada.

General—Swinton's Outlines of the World's History.

Constitutional—Bagehot's The English Constitution and Bourinot's Constitutional History of Canada.

Geography.—Dawson and Sutherland's Geography of the British Colonies, Tarr's Elementary Physical Geography, The New Canadian Geography.

Mathematics.—Hamblin Smith's Arithmetic, C. Smith's Algebra, McKay's Elements of Euclid, D. A. Murray's Plane Trigonometry and Tables, McLean's High School Book Keeping.

Science.—Spotton's High School Botany—Manitoba edition, Gage's Introduction to Physical Science, Kirkland's Experimental Chemistry, Sedgwick and Wilson's General Biology, Public School Agriculture.

Classics.—Henderson and Fletcher's First Latin Book.

Moderns.—High School French Grammar, High School German Grammar.

NORMAL SCHOOLS.

Local Normal Schools. (Third Class.) Garlick's New Manual of Methods with Appendix, Tilley's Methods in Teaching, School Ordinance and Regulations, Ontario Manual of Hygiene.

The Normal School. (Second Class.) Dexter and Garlick's Psychology in the School Room, Landon's Teaching and Class Management, White's School Management, The Report of the Committee of Five, Ontario Manual of Hygiene, School Ordinance and Regulations; and Browning's Educational Theories and Quick's Educational Reformers as references, Fitch's Lectures on Teaching.

(First Class.) Rosenkranz' Philosophy of Education, Sully's Handbook of Psychology [Revised edition], De Garmos' Essentials of Method [Revised edition], Landon's Teaching and Class Management, White's School Management, Laurie's Lectures on Linguistic Method, Herbert Spencer's Education, Report of the Committee of Ten, Fitch's Lectures on Teaching.

In all classes, Drawing and Music as for Public School Standards.

APPENDIX G.

EXAMINATIONS 1900.

PUBLIC SCHOOL LEAVING.

*Literature.**Time—Two and one-half hours.*

A.

As ships, becalmed at eve, that lay
 With canvas drooping, side by side,
 Two towers of sail at dawn of day
 Are scarce long leagues apart descried ;

When fell the night, up sprung the breeze,
 And all the darkling hours they plied,
 Nor dreamt but each the self same seas
 By each was cleaving, side by side :

E'en so—but why the tale reveal
 Of those, whom year by year unchanged,
 Brief absence joined anew to feel,
 Astounded, soul from soul estranged ?

At dead of night their sails were fill'd,
 And onward each rejoicing steer'd—
 Ah, neither blame, for neither will'd,
 Or wist, what first with dawn appear'd !

To veer, how vain ! On, onward strain,
 Brave barks ! In light, in darkness too,
 Through winds and tides one compass guides—
 To that, and your own selves, be true.

But O blithe breeze ! and O great seas,
 Though ne'er, that earliest parting past,
 On your wide plain they join again,
 Together lead them home at last.

One port, methought, alike they sought,
 One purpose hold where'er they fare,—
 O bounding breeze, O rushing seas !
 At last, at last, unite them there.

1. In a phrase or sentence state the subject of this poem.
2. Give a short paraphrase of the whole poem.
3. Explain the following—"towers of sail," "darkling hours," "soul from soul estranged," "one compass guides," "where'er they fare."

4. Account for the dash after "E'en so." Why does the author ask the question which follows it?

6. Explain the inner meaning of "at dead of night."

7. What is the difference in metre in the last three stanzas? Give a reason for this difference.

B.

The delicate shells lay on the shore ;
 The bubbles of the latest wave
 Fresh pearls to their enamel gave,
 And the bellowing of the savage sea
 Greeted their safe escape to me.
 I wiped away the weeds and foam—
 I fetch'd my sea born treasures home ;
 But the poor unsightly, noisome things
 Had left their beauty on the shore,
 With the sun and the sand, and the wild uproar.

1. What is the object of the poem "Each and All"?

2. Explain how the picture presented in the foregoing lines goes to show that

"All are needed by each one—
 Nothing is fair or good alone."

3. What is the nature of the thought in lines 10-11?

4. Tell the poet's meaning when he says—

"I covet truth ;
 Beauty is unripe childhood's cheat."

5. Describe the picture that causes the poet to say—

"Beauty through my senses stole—
 I yielded myself to the perfect whole."

C.

When the ceremony was finished, the Scottish Knight looked at the gallery, and bent his head to the earth, as if in honour of those invisible beauties which were enclosed within ; then, loaded with armor as he was, sprung to the saddle without the use of the stirrup, and made his courser carry him in a succession of caracoles to his station at the eastern extremity of the lists. Conrad also presented himself before the altar with boldness enough ; but his voice, as he took the oath sounded hollow, as if drowned in his helmet. The lips with which he appealed to Heaven to adjudge victory to the just quarrel, grew white as they uttered the impious mockery. As he turned to remount his horse the Grand Master approached him closer as if to rectify some thing about the sitting of his gorget and whispered, "Coward and fool ! recall thy senses, and do me this battle bravely ; else, by Heaven, shouldst thou escape him, thou escapest not *me*."

1. What is the subject of this paragraph?
2. Describe briefly the "ceremony" referred to in line 1.
3. Contrast the bearing of the two knights upon entering the lists.
4. Explain—Invisible beauties, succession of caracoles, lists, impious mockery, gorget.
5. Describe the contest between Conrad and Sir Kenneth.

D.

1. Quote any one of the following—
 - (a) Our Ideal.
 - (b) On First looking into Chapman's Homer.
 - (c) On the Grasshopper and the Cricket.
 - (d) One stanza from the essay on Man beginning, "Lo, the poor Indian! whose untutor'd mind."

Composition.

Time—Two Hours.

1. (a) Write from three to six simple sentences about any *one* of the following topics—"A Runaway," "Lost in a Blizzard," "The North-West Rebellion," "The Lion's Escape."

(b) Combine these sentences into one or more of the following types—
(i) loose sentence, (ii) periodic sentence.

(c) Point out the advantages and disadvantages of each of these types of sentence.

2. (1) He was married in 1836, the year his first books were published, and his home was soon made glad with the sound of childish voices. (2) He had never shut his heart against suffering, and was full of sympathy for every childish sorrow. (3) How dear to the great man were these little ones, and what a gentle loving father they had! (4) When he was a very small boy and lived in Chatham, he used once in a while to walk by a large old fashioned house on the top of a hill called "Gadshill." (5) His father used to tell him that if he worked hard he might live there when he was a man. (6) In his beautiful home he received his friends. (7) After he became successful he bought this very house and spent many happy years in it. (8) He had a great liking for this house, perhaps because of two fine cedars that grew near it.

(a) Paragraph this selection re-arranging the sentences in proper order.

(b) State the subject of each paragraph and show their relation to one another.

(c) Show the relation of sentences (7) and (8) to the subjects of the paragraphs in which you have placed them.

(d) Account for the exclamative form of sentence (3.)

3. Mrs. John White of Regina sends a formal invitation to Henry Black, requesting him to spend an evening at her home. Write the invitation.

4. Robert Smith of Regina writes to Baker and Co., Grain Dealers, Winnipeg, offering a quantity of grain for sale. Write the letter and in it refer to the following matters—

- (a) The time when the grain can be delivered at the track,
- (b) The forwarding of samples,
- (c) The quantity and quality of the grain,
- (d) Inquiries about prices.

5. (a) Make an outline for a composition on any one of the following—"The South African War," "Alfred the Great," "The Saskatchewan River," "The Buffalo," "The Trial of Shylock," "Earthworms."

(b) Write the first two paragraphs of a composition based on this outline.

(c) Show that the first paragraph written possesses unity.

6. When thousands are left without pity and unattended on a field of battle, amid the insults of an enraged foe and the trampling of horses, while the blood from their wounds, freezing as it flows, binding them to the earth, and they are exposed to the piercing air, it must be, indeed a painful scene.

- (a) Account for the lack of clearness in this sentence.
- (b) Rewrite it so as to express clearly the intended thought.

7. Paraphrase:

"Be useful where thou livest, that they may
Both want and wish thy pleasing presence still.
Kindness, good parts, great places, are the way
To compass this. Find out men's wants and will,
And meet them there. All worldly joys go less
To the one joy of doing kindnesses."

Grammar.

Time—Two hours.

1. "When struck, the old ship sank quickly to the bottom."

- (a) What are the essential parts of this sentence? Why?
- (b) Show how each word or group of words in the sentence helps to express the thought intended.

2. (i) The alarm rang. A crowd came rushing down the street.

(ii) The alarm rang and a crowd came rushing down the street.

(iii) When the alarm rang the crowd came rushing down the street.

- (a) Classify these sentences and state the basis of your classification.
- (b) What difference in thought is expressed by (i), (ii) and (iii)?
- (c) Compare the thought expressed in (iii) with,—Down the street a crowd came rushing when the alarm rang.

3. Discuss the correctness of the following definitions—

- (a) A personal pronoun is one that stands instead of a noun.
- (b) An adjective is a word used to qualify a noun.
- (c) A collective noun is the name of a collection of things.

4. (a) Describe with examples, the different ways in which a distinction of sex is indicated by gender nouns.

(b) Give the corresponding gender form of hind, witch, duck, madam, Czar, marquis.

(c) Write the plural form of roof, spoonful, gas, radius, brick, governor general.

5. "If the British army do not come to our relief today, the town will be taken."

(a) State the uses of "do," "will," and "be" in this sentence.

(b) Is the verb *will be taken* transitive or intransitive? Give reasons.

(c) By referring to this sentence explain the meaning of the terms mood and agreement as applied to verbs.

6. "There at the foot of *yonder* nodding beech
That wreathes its old fantastic roots *so* high,
His listless *length* at noon tide would he stretch,
And *pore* upon the brook that babbles by."

(a) Classify the phrases and clauses in this sentence and give the grammatical relation of each.

(b) Parse the italicised words.

(c) Point out any difference or similarity in the use of (1) "upon" and "by," (2) "that" and "and," as they are employed in the above sentence.

7. Distinguish the use of "nodding" in the following—

(a) Yonder nodding beech.

(b) The beech nodding in the breeze, etc.

(c) His nodding slightly was accepted by all as consent.

(d) Nodding is an indication of drowsiness.

8. (a) Write sentences containing the present progressive and the past perfect forms of the verbs "go" and "hang."

(b) Write a sentence containing two dependent co-ordinate clauses.

Principles of Reading.

Time—One hour.

1. Dear Harp of my country, farewell to thy numbers,
This sweet wreath of song is the last we shall twine!
Go, sleep with the sunshine of fame on thy slumbers,
Till touched by some hand less unworthy than mine;

If the pulse of the patriot, soldier or lover,
Have throbbed at our lay, 'tis thy glory alone;
I was but as the wind passing heedlessly over,
And all the wild sweetness I waked was thy own.

(a) What state of feeling is exhibited in these stanzas?

(b) With what Pitch and in what Time should these stanzas be read? Why?

(c) What parts of the first stanza are to be read with a rising inflection, and what with a falling inflection?

(d) Indicate the rhetorical pauses in lines 5-6. Give a reason for each.

(e) Write the emphatic words in lines 7-8. Give reasons for your selection.

2. Show what are the common faults of pronunciation in the following words—accurate, articulation, curiosity, perhaps, poetry, library, believe, often.

3. What are your tests for determining whether a stanza has been read correctly?

Spelling and Orthoepy.

Time—One hour.

1. Write the passage dictated by the presiding examiner. High School Reader page 152. “His founder’s merits.....a people to rebellion.”

(This is not to be seen by the candidates. It is to be read to them three times—the first time to enable them to gather the meaning; the second time to enable them to write the words; the third time for review. Candidates are not permitted to rewrite the passage.)

2. Divide the following words into syllables and mark the accent :—contemplation, interesting, annihilating, tyrannous, advertisement, discipline.

3. From each of the following primitives form by suffixes or prefixes three derivatives and give in each case the force of the addition :—tend, sick, migrate, head.

4. Write sentences showing the difference in meaning between : coarse, course ; core, corps ; sufficient, enough ; pity, compassion ; mate, comrade.

5. Write in full the following abbreviations : prox. ; M.L.A. ; P.M. ; 8vo.

6. What is the rule for the spelling of such words as suffer and confer when a syllable beginning with a vowel is added ?

Arithmetic and Mensuration.

Time—Two hours.

1. (a) Find, to two decimal places, the square root of the sum of all the odd numbers from 7647 to 7661 inclusive.

(b) Find the ratio of $11\frac{1}{4} + (\frac{1}{20})^2$ to $(\frac{1}{4})^2 \div 500$.

(c) Express in the form of a decimal the difference between the expressions in (b).

2. The buildings on a farm are worth \$125 less than the land. If $\frac{2}{3}$ of the value of the land is equal to $\frac{3}{4}$ of the value of the buildings find the value of each.

3. A dealer purchased 240 bbls. of apples at \$3.50 per bbl. If $16\frac{2}{3}\%$ of them were spoiled and he sold $\frac{3}{4}$ of what was left at a loss of 10% what must he sell the remainder for per bbl. so that he may lose nothing on the transaction ? The freight and other expenses amounted to \$32.50.

4. A and B took the contract of erecting a dwelling for \$1800. A, being the better workman, was to receive 20c. per day more than B, and the profits if any were to be divided equally. When the contract was completed it was found that the material had cost \$1200, extra labour and other expenses \$128, and that A had worked 60 days, and B 70 days. If the profits to be divided amounted to \$70, find the daily wages of each.

5. Make and solve a problem in carpeting in which the cost of the carpet per yard is to be found.

6. On the 23rd of December 1899 a farmer refused 50c. per bush. for 600 bush. of wheat. On the 1st of March he shipped it to an agent at Fort William to be sold on a commission of 2% at 75c. per bush. The freight charges amounted to \$108, and the elevator and insurance rates to 1½c. per bus. If the farmer received the proceeds of the sale 5 days after shipment, find the farmer's gain or loss by holding the wheat—money being worth 8%.

7. The length of each of the edges of a silver box is 1 decimeter, and the thickness of each of the sides is ½ a centimeter. If the box is covered with gold leaf worth 3c. per square centimeter, and silver is worth \$20 per cube decimeter, find the value of the box.

8. A cylindrical tank 14 ft. in diameter is filled with two tiers of cord wood standing on end. If the cord wood is 4 ft. long and the second tier projects 1½ feet above the rim of tank find :

- (a) The value of the wood at \$8 per cord,
- (b) The capacity of the tank,
- (c) The cost of lining the tank with sheet iron at 5c. per sq. foot.

Algebra and Geometry.

Note.—Candidates must obtain at least 34 per cent. on each section.

Time—Three hours.

A

1. Find the difference between $a^2 - (a-1)^2 + (a^2+1)^2$ and the square of $a^2 - a + 1$.

2. Simplify $2[a - 2a - \{-a + 2a(a-2)\}]$.

3. (a) Explain fully the meaning of the expression $(\frac{1}{2}ac - ad)^2$.

(b) State the rule for finding the expansion of this expression. Give the expansion.

(c) By referring to the above expression explain the meaning of the terms power, coefficient, factor, negative quantity.

4. In a question in division the divisor is $\frac{1}{x} + \frac{2}{y}$, the quotient is $\frac{xy}{y^2 + 4xy + 4x^2}$, and the remainder is $\frac{1}{y-2x}$; find the dividend and express it in its shortest form.

5. Resolve into their prime factors,
 (1) $a^8 - b^8$.
 (2) $x^3 + 3x - (3x^2 + 1)$.
 (3) $x^2 + 11x - 180$.
6. (a) Explain what is meant by simultaneous equations of the first degree.
 (b) State in a general way your method of solving one.
 (c) Solve : $3x - 5y = -9$
 $5x + 8y = 19$.
7. A merchant bought a number of boxes of oranges for \$100. When they arrived the oranges in two of the boxes were unfit for sale. He sold $\frac{1}{6}$ of the remainder for \$12.75 which was \$2.25 less than they cost. Find the number of boxes purchased.
8. The area of a right angled triangle is y yards, and the length of the base is z feet. Express the number of square rods in a square described upon the altitude of the triangle.

B

9. Define straight line, trapezium, theorem.
10. (a) Upon what does the magnitude of an angle depend?
 (b) Show how any angle may be bisected.
 (c) Construct an angle of $52\frac{1}{2}^\circ$ without using a protractor. Describe your construction.
11. (a) Construct an isosceles triangle having given one of its legs and one of the angles at the base.
 (b) Is it necessary that this angle should be given? Explain.
 (c) Show that the sum of the angles of the constructed triangle is equal to two right angles.
12. The distances between three towns A, B, and C are : $AB = 9^{\text{km}}$, $AC = 7^{\text{km}}$, $BC = 6^{\text{km}}$. A straight railroad runs from A to B. It is desired to have a station placed as near as possible to C. Draw a plan on a scale of half an inch to a kilometer and find at what distance from A the station should be built.
13. (a) Distinguish semicircle, arc, sector.
 (b) A man walks three miles in a straight line ; and then he walks in an arc of a circle through whose centre he has passed, and whose radius is 1 mile, till he has made the chord of the arc equal to the radius. Find how far he has walked.
14. A field in the form of a trapezoid contains 80 acres. If the parallel sides are 40 rods apart find their respective lengths one being three times as long as the other.
15. Describe, making use of drawings, an indirect method of finding the width of a river.

History.

Time—Two hours.

1. State concisely what led to the passing of the Constitutional Act. Give its leading terms and its chief defects.

2. What was the object of Lord Durham's mission to Canada? Give the substance of his report.
3. Write an account of the North-West Rebellion of 1885.
4. Give an account of the dispute which led to the Ashburton Treaty. State the terms of the treaty.
5. Write briefly upon any *three* of the following: De Montfort's Parliament, Battle of Bosworth Field, Abolition of the Slave Trade, Spanish Armada, Feudal System.
6. Tell the causes of the Great Civil War in the Stuart Period. Name *three* of the leading engagements with the result of each. What was the outcome of the war?
7. Tell what you know of the circumstances that brought about the present war in the Transvaal.

Geography.

Time—One and three-quarter hours.

1. Beginning at the north describe the western slope of North America under the heads outline, fertility, industries. Account for the location of its principal cities. For what are these important?
2. Compare as to cause, occurrence and effect: trade winds, land and sea breezes, monsoons.
3. Give a description of the Saskatchewan Basin as to area, productive regions and industries.
4. Draw a map of the North-West Territories showing the railways; regions of wheat, timber, minerals and grass; and nine important towns.
5. Write notes on the food, home, occupations and method of transportation of the Eskimo, the Swiss or the Kaffir.
6. For what manufactures are the following cities noted: Manchester, Leeds, Sheffield, Belfast and Paisley?
7. Mention the chief coaling stations for British ships between London and Sydney, New South Wales, travelling by way of (a) the Mediterranean sea, (b) Canada.
8. Draw a map of South Africa showing Cape Colony, Transvaal, Orange Free State, Delagoa Bay, Cape Town and Pretoria.
9. Give the source in nature and the places from which the following are exported: ginger, cocoa, cloves, tar, tapioca, dates.

Nature Study and Agriculture.

Time—Two hours.

1. (a) What are the conditions necessary to the germination of seeds?
- (b) Show by drawings the form of the seedling of a grain of wheat, of a bean, about one week after germination.

2. (a) Give the position and uses of buds.
 (b) Account for the ways in which they are protected.
 (c) What prevents all buds from developing into branches?
3. (a) What is the purpose of the stem in trees, in vines?
 (b) State the functions of the bark and the pith.
4. (a) By drawings show the forms of the leaf of wheat, maple and carrot.
 (b) How do these forms affect the plant's supply of food and light in each case?
5. Describe the position and use of the parts of the flower of the anemone.
6. (a) How would you prepare, for a crop of potatoes, soil from which one crop of wheat had been raised after breaking?
 (b) State the purpose of each step in this preparation.
7. Write notes on butter making under the following heads: Suitable breeds of cattle, their feeding; care of cream, churning.
8. Describe tree planting under the following heads: Suitable trees for protection, preparation of soil, transplanting, care after transplanting.
9. Describe French weed (stink weed). Outline a method of treating a field overrun with this weed.
10. Describe a duck's bill and show that such would not be suited for a hawk.

Hygiene and Temperance.

Time—One and a half hours.

1. Writes notes on:
 - (a) The proper care of the nails, teeth and eyes.
 - (b) The beneficial effects of bathing.
2. What are the advantages of keeping the bedroom and bed clothing properly aired? How may this be done?
3. Describe the changes the food undergoes in the process of digestion.
4. Describe proper treatment in any two of the following cases, until the doctor comes:
 - (a) A person partially drowned.
 - (b) A person has fainted.
 - (c) A dislocated shoulder.
 - (d) A person has received a severe cut in the forearm.

5. Distinguish a stimulant, a narcotic, an intoxicant and a tonic. Give an example of each.

6. State as clearly as you can why children should not use tobacco.

TEACHERS' EXAMINATIONS.

NONPROFESSIONAL.

THIRD CLASS.

Poetical Literature.

Time—Three hours.

1. Fain would the Knight in turn require
The name and state of Ellen's sire.
Well showed the elder lady's mien,
That courts and cities she had seen ;
Ellen, though more her looks displayed
The simple grace of silvan maid,
In speech and gesture, form and face,
Showed she was come of gentle race.
'Twere strange in ruder rank to find
Such looks, such manners, and such mind.
Each hint the Knight of Snowdon gave,
Dame Margaret heard with silence grave ;
Or Ellen, innocently gay,
Turned all inquiry light away :—
“ Weird women we ! by dale and down
We dwell, afar from tower and town.
We stem the flood, we ride the blast,
On wandering knights our spells are cast ;
While viewless minstrels touch the string,
'Tis thus our charmed songs we sing.”
She sung and still a harp unseen
Filled up the symphony between.

- (a) Indicate the connection of the above passage in the poem.
 - (b) Explain clearly the following words as here used :—require, l. 1 ; mien, l. 3 ; silvan maid, l. 6 ; gentle race, l. 8 ; weird, l. 15 ; down, l. 15 ; viewless, l. 19 ; symphony, l. 22.
 - (c) What is Ellen's idea in lines 15-20 ? State any previous allusion to the same idea.
 - (d) Develop the comparison in lines 9-10.
2. (a) Quote the song in which she is made to “ grace the stranger,” —“ Huntsman, rest ! thy chase is done.”
- (b) Name two other songs in the poem and indicate the connection of each with the story.

3. Give an account of that portion of the poem which begins with the entrance of Ellen and Fitz-James to the presence chamber and ends with the conclusion of the poem.

4. Explain the italicised portions—

(a) I'll lightly *front* each high *emprise*.

(b) 'Tis *mimicry* of noble war.

(c) Fleet foot on the *correi*.

(d) Through *storied* pane the rising beams.

(e) And thread the brake like *questing* hound.

5. Briefly describe the poem "Michael" as you would to a person unacquainted with it.

All shod with steel

6. We hissed along the polished ice, in games
 Confederate, imitative of the chase
 And woodland pleasures—the resounding horn, 5
 The pack loud bellowing, and the hunted hare.
 So through the darkness and the cold we flew,
 And not a voice was idle. With the din
 Meanwhile the precipices rang aloud ;
 The leafless trees and every icy crag
 Tinkled like iron ; while the distant hills 10
 Into the tumult sent an alien sound
 Of melancholy, not unnoticed, while the stars
 Eastward were sparkling clear, and in the west
 The orange sky of evening died away.

(a) What is the poet's motive in the above description? Has he succeeded?

(b) Examine the sound effects in lines 7-10.

(c) State some of the characteristics of Wordsworth's poetry as exemplified in the above passage.

(d) Explain :—"Games confederate," "woodland pleasures," "tumult," "alien sound."

7. Explain in simple language the meaning of the following :

(a) That love which changed—for wan disease,
 For sorrow that had bent
 O'er hopeless dust, for withered age—
 Their moral element,
 And turned the thistles of a curse
 To types beneficent.

(b) Well might I mourn that He was gone,
 Whose light I hailed when first it shone,
 When breaking forth as Nature's own,
 It showed my youth
 How Verse may build a princely throne
 On humble truth.

- (c) Me this unchartered freedom tires ;
 I feel the weight of chance desires ;
 My hopes no more must change their name,
 I long for a repose that ever is the same.

8. Quote one of the following sonnets :

- (a) "Fair Star of the Evening, Splendour of the West."
 (b) "It is a Beauteous Evening, calm and free."
 (c) "Wings have we and as far as we can go."

9. Write a brief note upon the Sonnet as regards (a) form, (b) thought divisions.

Prose Literature.

Time—Two hours.

1. What are the advantages of the autobiographical method employed in the "Vicar of Wakefield?"

2. In this novel is our interest chiefly in the character and motives of the actors, or in their outward actions? Give illustrations in support of your view.

3. Mention the circumstances under which Burchell and young Thornhill are introduced to the Vicar and his family. What light do these introductions throw upon the character of each, and the part he is to play in the plot?

4. What contribution to the progress of the plot is made by the episode of Moses at the Fair?

5. What view of life (philosophy) does Goldsmith present in the character of the Vicar? In what respects, if any, does it differ from that presented in Wordsworth's Michael?

6. Describe the Vicar's views on prison reform. Discuss their soundness.

7. Write a brief character sketch of Mrs. Primrose.

8. Describe the kinds of humour exhibited in this novel referring to characteristic passages.

Essays.

Time—One and one half hours.

Write briefly—say three or four paragraphs—on three subjects selected from the list that follows. It is not the extent of your knowledge about the selected subjects so much as your ability to say a few things about them in a simple, clear, orderly and correct way that is the test.

1. Either of the following :

- (a) Burchell's description of Sir William Thornhill.

- (b) The Vicar's description of the behaviour of his family on their first Sunday in his new parish.

2. Either of the following :

- (a) Moses' narration of his experiences at the fair.
(b) Dick's repetition of the fable of the Giant and the Dwarf.

3. Either of the following :

- (a) Discuss "That virtue which requires to be ever guarded is scarce worth the sentinel."
(b) Discuss "That single effort by which we stop short in the downhill path to perdition is itself a greater exertion of virtue than a hundred acts of justice."

Rhetoric and Grammar.

Time—Two hours.

A.

(1) It would be fruitless to deny exultation when I saw my little ones about me ; but the vanity and satisfaction of my wife were even greater than mine. (2) When our visitors would say, "Well, upon my word, Mrs. Primrose, you have the finest children in the whole country":—"Ay, neighbour," she would answer, "they are, as Heaven made them, handsome enough, if they be good enough ; for handsome is that handsome does." (3) And then she would bid the girls hold up their heads ; who, to conceal nothing, were certainly very handsome. (4) Mere outside is so very trifling a circumstance with me that I should scarce have remembered to mention it, had it not been a general topic of conversation in the country. (5) Olivia, now about eighteen, had that luxuriance of beauty, with which painters generally draw Hebe ; open, sprightly, and commanding. (6) Sophia's features were not so striking at first, but often did more certain execution ; for they were soft, modest and alluring, (7) The one vanquished by a single blow, the other by efforts successfully repeated.

1. What is the subject of this paragraph ?
2. (a) Mention the details employed in presenting this subject.
(b) Comment upon their order and suitability.
3. (a) Give the relation, in thought, of sentence 7 to sentences 5 and 6.
(b) To what devices are its connection and effect due ?
4. What idea is conveyed by the words, "striking," "execution," "vanquished" and "blow" in the last two sentences ?
5. What are the advantages and defects of the figurative language used in sentence 5 ?
6. Distinguish handsome and beautiful ; conceal and hide ; remember and recollect.
7. State the uses of the semicolon in this paragraph.

B.

1. Classify (grammatically) sentence 2 in this paragraph.
2. Write out each subordinate clause and state clearly its grammatical function, and the word or words which it modifies.
3. Give the grammatical function and relation of "Well," "upon my word," "neighbour," "handsome enough," "be," "for," "handsome" (is).
4. Distinguish between :
 - (a) "You should attend church" and "You ought to attend church."
 - (b) "I shall not be the only sufferer" and "I will not be the only sufferer."
 - (c) "I called his attention to the matter" and "I have called his attention to the matter."
5. (a) Show how in word building prefixes alter the meaning of words, and suffixes their function.
- (b) Define root and rootword giving examples of each.

Principles of Reading.

Time—One hour.

1. "How soundly he sleeps," whispered the old gentleman. "From what a depth he draws that easy breath! Such sleep as that, brought on without an opiate, would be worth more to me than half my income, for it would suppose health and an untroubled mind."

"And youth besides," said the lady. "Healthy and quiet age does not sleep thus. Our slumber is no more like his than our wakefulness."

The longer they looked, the more did this elderly couple feel interested in the unknown youth, to whom the wayside and the maple shade were as a secret chamber, with the rich gloom of damask curtains brooding over him.

(a) Select with reasons the four most emphatic words in the first paragraph.

(b) "All diction may be roughly described as exhibiting one of three states of feeling." What are these? Point out examples of any two of them in this extract.

(c) When is the rising inflection used? When the falling? Give illustrations from this extract.

(d) What is meant by pitch? Give examples of sentential and radical pitch from this extract.

2. Explain what is meant by articulation. What are the difficulties in articulating the following—whispered, depths, February, James eats apples, It is an ox.

3. Divide the following words into syllables and mark the accented one—abstinence, chastisement, bronchitis, discipline, mischievous, precedence, apricot, corollary.

*Arithmetic and Mensuration.**Time—Three hours.*

1. In a question in subtraction the remainder is 45.0096. If both the subtrahend and minuend be multiplied by 7.09 what will the remainder be?

2. (a) Distinguish, giving examples, compound and complex fractions, decimals and decimal fractions.

(b) Deduce the rule for reducing fractions to their lowest terms.

(c) Explain the expressions (i) $\frac{2}{3}$ times 2 squares inches, (ii) $\frac{2}{3}$ of 2 square inches. Show how to simplify the former of these.

3. A, B and C together own 4.6875 of a township of land. If A's farm is $\frac{1}{2}$ mile square and B's contains $\frac{1}{2}$ of a square mile, find the relation of C's to the combined area of A's and B's. Express this relation in the form of (i) a vulgar fraction, (ii) a decimal, (iii) per cent., (iv) ratio.

4. A farm is rented for \$120 in money and so many bush. of wheat. When wheat is 60c. per bush. the rent is 25% lower than when it is \$1.60 per bush. Find the rent paid.

5. The difference between the proceeds of a note discounted at 6% and 8% would amount to \$3.15. If the note was drawn for 6 mos. at 10% find (a) its face value, (b) its value at maturity.

6. In a problem in lumber measurement the cost of the two inch plank in a sidewalk is given.

(a) What other facts must be known in order to find the width of the walk?

(b) Show how you would proceed to solve the problem.

7. In a town where the taxation is $12\frac{1}{2}$ mills on the dollar, A pays twice as much taxes on his property as he pays on his income, \$400 of which is exempt from taxation. If his taxes amount to \$30 and his property is assessed for 80% of its value find, (i) The value of A's property; (ii) His income.

8. A business block, erected at a cost of \$12,000, contains 3 stores and 10 offices, each of which is rented continuously at \$40 and \$10 per month respectively. On the day of occupancy the building was insured for 3 years by the Phoenix Co. for 80% of its value at a premium of 3%. One and a half years afterwards the Phoenix Co. disposed of 50% of its risk to the Etna Co. at a premium of $21\frac{1}{2}\%$. If the building was burned down at the end of the second year and the cost of management averaged \$50 per month, find—

(a) The owner's gain or loss,

(b) The Phoenix Co.'s loss.

9. A contractor clears \$375 on a ditch $11\frac{1}{2}$ miles long, 12 ft. wide at the top, 6 ft. wide at the bottom, and 5 ft. deep. Find the contract price

per cubic yard if labour is worth \$1.25 per day and the work required the labour of 30 men for 20 days.

10. The water in a cylindrical well, $5\frac{1}{11}$ ft. in diameter, is $9\frac{15}{22}$ ft. deep. If the well is 11 feet deep find the dimensions of a cubic block of stone which, when dropped into the well, will raise the water to the level of the top.

11. A log, tapering uniformly, is 20 ft. long, 3 ft. in diameter at one end and 2 ft. 6 in. at the other.

(a) How many cubic feet does it contain?

(b) Find the amount of lumber in the largest stick, whose ends are square and equal, that can be cut from it.

Algebra.

Time—Three hours.

1. (a) Remove all brackets from

$$-x(1-(1-(-1-2(1-2))))) .$$

(b) Multiply $a-b+c$ by a quantity which will give $a^3-(b-c)^3$ as the product.

(c) From the sum of the squares of x^2+2x+1 and x^2-2x+1 take twice their product.

2. (a) Explain fully the meaning of the expression $(\frac{1}{8}a^2b - \frac{1}{8}ab^2)^3$.

(b) State the degree of this expression and of each of its terms.

(c) If $a=4$, and $b=-1$ simplify the expression and account for the quality of the resulting quantity.

3. In the following expressions bracket together the like powers of x so that the signs before all the brackets shall be negative :

(i) $3a^2x^2 - x^3 - 2a^2bx^4 + 4abx^2 + 5cx^3,$

(ii) $3cx^3 + 2ab^2x^4 - 6abx^2 - 6c^2x^3 + a^2bx^4,$

(iii) $b^2x^2 - ab^2x^4 + 10c^2x^3 - 2a^2x^2 + 5x^3.$

Add the expressions as thus bracketed and express the result in as concise a form as possible.

4. (a) State the rule for finding the continued product of

$$(x+a)(x+b)(x+c).$$

(b) Apply this rule to finding the continued product of

$$(2x+\frac{1}{2})(2x-\frac{1}{2})(2x+1).$$

5. (a) Distinguish, giving examples, an identity (identical equation) and an equation (conditional equation).

(b) Explain the meaning of, (i) the roots of an equation, (ii) simultaneous equations of the first degree.

6. In solving the following equations explain clearly the reasons for each step taken and indicate the way in which each new equation is derived from the preceding one.

(i) $\frac{x+3}{1} + 1 - .5x = \frac{1}{2} \left(\frac{x-.5}{2} \right).$

(ii) $\frac{x}{3} - \frac{1}{2} = \frac{y}{6},$

$$\frac{x}{5} - \frac{1}{2} = \frac{3y}{10},$$

7. (a) Solve the following simultaneous equations (i) by comparison, (ii) by substitution :

$$\frac{a}{x} + \frac{b}{y} = 1,$$

$$\frac{b}{x} + \frac{a}{y} = 1.$$

(b) Which is the better method ? Why ?

8. A grain dealer purchased a quantity of oats at 40c. per bush. He sold $\frac{2}{3}$ of it at a loss of 10% and the remainder at a gain of 25%. If his total gain was \$1.60 find the quantity purchased.

9. A paid \$60 interest on a sum of money which he borrowed at 10%. Had he borrowed \$400 more for $\frac{1}{6}$ of the time he would have paid only $\frac{1}{2}$ as much. Find the sum borrowed.

10. The area of an isosceles triangle is x square feet and its altitude is z yards. Express (in terms of x and z) the length in rods of the diagonal of a square described on one of the sides of the triangle.

11. A vessel is partly filled with a mixture of wine and water ; if 50 gallons of wine are added there is $\frac{7}{8}$ ths as much wine as water ; but if 50 gallons of water are added there is then 4 times as much water as wine. How many gallons of wine are there in the vessel at first.

Geometry.

Time—Three hours.

1. (a) From a given point to draw a straight line equal to a given straight line. I. 2.

(b) Show that there may be eight varieties of the solution of (a). State the elements or conditions common to these varieties.

(c) Distinguish between a postulate and a problem, between a problem and a theorem.

2. (a) To draw a straight line perpendicular to a given straight line from a given point without it. I. 12.

(b) If the proposition be correctly enunciated in (a) show that there is no certainty the circle will cut the given line.

(c) From the proof of (a) draw three inferences regarding the properties of an isosceles triangle.

3. (a) Prove that if two angles and a side in one triangle be respectively equal to two angles and the corresponding side in another triangle, the two triangles shall be equal in every respect. I. 26. (Take the case in which the equal sides are opposite one of the equal angles in each triangle.)

(b) State the different sets of conditions under which two triangles coincide.

(b) A farm lies between two roads not parallel ; determine when possible, where the owner should locate his house that it may be equally convenient to each road.

4. (a) Prove that if the side of a triangle be produced, the exterior angle is equal to the sum of the two interior opposite angles, and that the sum of the three interior angles is equal to two right angles. I. 32.

(b) From proposition (a) draw three inferences regarding the angles of a right angled triangle.

5. Prove that the straight lines which bisect the opposite angles of a parallelogram are either parallel or they coincide. When do they coincide?

6. (a) Define the figures inclosed by four straight lines drawn (i) with no pair parallel; (ii) with one pair parallel; (iii) with two pairs parallel.

(b) Prove that parallelograms on the same base and between the same parallels are equal in area. I. 35.

(c) Point out the uses of proposition (b) in mensuration.

(d) Prove that if a square and a rhombus be on the same base the square has the greater area.

7. (a) Prove that the square described on the hypotenuse of a right angled triangle is equal to the squares described on the other two sides. I. 47.

(b) A barn is 40 feet wide; the ridge of the roof is 15 feet high; how long should the rafter be to project 18 inches beyond the wall?

(c) On the diagonal of a square a second square is described; on the diagonal of this second square a third square is described; on the diagonal of this third square a fourth square is described. Compare the areas of the fourth and first squares.

Book Keeping.

Time—Two hours.

1. State clearly the distinction between Single and Double Entry. Point out the advantages and disadvantages of each.

2. What is meant by Personal Account, M'd's Account, Trial Balance.

3. What are the purposes of the proprietor's account and the expense account?

4. Ray & Co., Edmonton, desire the services of a book keeper.

(a) Write their advertisement.

(b) Write an application for that position from John Doe, Balgonie.

5. June 1st, Richard Roe, Balgonie, sold John Doe a quarter section of land at \$5 an acre and received cash \$200 and a negotiable note for the balance, bearing interest at 8 per cent. for three months, payable at his office. This note Roe discounted immediately in the bank at 1 per cent. per month.

(a) Write the note.

(b) What would the bank require of the payee before discounting it?

(c) Give the journal entries of both maker and payee in the above transaction.

(d) Give the payee's journal entries on getting the note discounted in the bank.

(e) What is meant by protesting a note?

6. June 1st, 1900, I, William Brown, began business with the following assets and liabilities :

ASSETS.

Cash on hand.....	\$ 500 00	
Mdse.....	800 00	
Buildings and supplies.....	1500 00	
Horse and waggon for delivery.....	150 00	
W. Green's note due 31st Dec., 1900	250 00	
N. Robertson owes me.....	40 00	
		<hr/> \$3240 00

LIABILITIES.

A note in favour of Thomas Blue due Dec. 31st, 1900..... \$400 00

June 2—Bought of N. Robertson 15 bbls. apples at \$2.75 a bbl.

Paid cash to balance his account.

“ 3—Bought a bbl. coal oil for use in business, \$12.75. Cash sales this day \$75.

“ 4—Arranged with T. Blue to take up my note. He allowed discount \$8, accepted Green's note in my favour at its face value, 15 bbls. apples at \$3 a barrel, and cash for the balance.

“ 5—Sold N. Robertson Mdse. \$32.75.

Received in payment his note at 10 days for \$20, the balance to remain on account.

Got N. Robertson's note discounted in Bank of Montreal, discount allowed, 50 cents.

“ 18—This note was protested, charges \$1.50. I paid the note with expenses of protest, charged the same to his account, and wrote for an explanation.

“ 20—Sold out to A. Cameron who assumed my liabilities, paid me for assets one half cash and gave me his note at 6 months, interest 8 per cent.

Took stock and found on hand :

Mdse.....	\$ 725 00
Coal oil.....	10 00
Buildings, etc.....	2000 00
Horse and waggon	175 00
Cash.....	462 00

(a) Post these transactions in a ledger.

(b) Close the ledger and make out a statement showing my standing after sale.

(c) Write A. Cameron's note in my favour.

(d) Reproduce the letter referred to on June 18th.

*Canadian and British History.**Time—Two hours.*

1. Regarding our system of government what is meant by saying it is "federal;" that it has "safeguards;" that the "will of the people is supreme in government?"
2. Write a concise account of the first Riel rebellion.
3. (a) Narrate the circumstances that led to the Montreal Riots in 1849.
(b) What was the result of these riots?
4. (a) Tell the causes of the war of 1812.
(b) Sketch as fully as time will permit the campaign of 1814.
(c) What was the nature of the treaty that closed the war?
5. Comment upon the Norman Conquest, stating its influence on English history.
6. Give a short sketch of the progress in inventions, in means of communication and transport, in science and literature, during the reign of Victoria.
7. Write brief notes upon any *three* of the following—Rise of Party Government, Reform Bill of 1832, the Great Charter, the Crusades.

*Geography.**Time—Two Hours.*

1. How are peninsulas formed? Give illustrations to show their use to a continent and to man.
2. Describe the processes in the growth and development of fertile valleys, taking as examples the valleys of the Mississippi and the Nile.
3. Two points on the Arctic Circle have the same difference of longitude as two points on the Tropic of Capricorn. Which two points are the farther apart in miles? Why?
4. Give the position of the following, mentioning anything notable about them—Marseilles, Crimea, St. Helena, Glasgow, Honolulu.
5. With what is a vessel from Yokohama bound for San Francisco likely to be freighted?
6. Write a sketch of Cape Colony under the heads—Position, general surface features, climate, plant and animal life, inhabitants, chief industries.
7. Sketch the main physical features, the plants and settlement of New Zealand.
8. Locate definitely the three steppes of Western Canada. What are the conditions favouring each as regions for grain growth, grazing and tree culture?
9. Following road allowances find the exact distances from (N.E. $\frac{1}{4}$ 29-51-21 to N.W. $\frac{1}{4}$ 1-52-22 North-east quarter of Section 29, Township

51, Range 21 to North-west quarter of Section 1, Township 52, Range 22, all west of the 4th Meridian.

10. Draw a map of Canada indicating the commercial centres and routes of trade. In the newer and less settled portions mark the probable centres of commerce and trade routes. Give reasons for such marking.

Physics.

Time—Two and one half hours.

1. (a) Outline the theory of the constitution of matter and cite at least three facts regarding the properties of matter which tend to prove it.

(b) Which is the more porous, solids or liquids? Why?

(c) How does the duration of stress affect the elasticity of a body?

2. A certain body has a volume of 8.8^{cc}. What will be the upward pressure upon it when immersed

(a) In water?

(b) In a liquid whose density is .87 gms per c.c.?

3. (a) State the law of the attraction of gravity.

(b) What facts would we require to know to ascertain the weight of the moon?

(c) A man buys tea at Victoria and sells it at Banff; does it gain or lose in weight at Banff when weighed (i) in a spring balance, (ii) in a set of weight scales? Give reasons for your answer.

4. (a) What is meant by the centre of gravity?

(b) How would you find the centre of gravity of a cube, a ring, a bag of gas lighter than air?

(c) Define the different kinds of equilibrium and give examples of each.

5. (a) Outline the construction of the hydrostatic press and explain its working.

(b) Compare the areas of the pistons of a hydrostatic press when a force of 6.25 centigrams acting on the smaller produces an upward pressure of 5.75 grains in the larger.

6. (a) Describe an experiment to find the atmospheric pressure at sea level.

(b) Describe the construction of an aneroid barometer and explain the principles upon which its action depends.

(c) The readings of the barometers at "x" and "y" are 27.6 inches and 29.1 inches; compare the altitudes of these places.

7. The areas of the bases of three vessels—one cylindrical, one funnel shaped, and one cone shaped—are equal, and the vessels are filled to an equal depth with water.

(a) Compare the pressure exerted upon the base of each vessel with the weight of water it contains.

(b) Compare the liquid pressures exerted upon the sides of these vessels.

(c) Show that the pressure exerted upon the object supporting each of these vessels is not identical with the pressure on their bases.

8. Four ounces of hot iron filings and four ounces of hot water at the same temperature are poured upon different blocks of ice. Which will melt the more ice? Why?

9. Describe the differences between condensing and noncondensing engines in (a) structure, (b) mode of action, (c) economy of work.

10. Show that the potential energy of a body due to advantage of position is not merely the attraction of gravity.

11. Compare the penetrative powers of a bullet weighing 3 ounces and having a velocity of 800 feet per second and a bullet weighing 4 ounces and having a velocity of 400 feet per second.

12. (a) What is meant by mechanical advantage?

(b) State the general law of machines.

(c) Having given a balance with unequal arms, a box of weights and a substance to be weighed, how would you determine the weight of the substance by applying the principle of moments?

(d) A man carries a bundle at the end of a stick across his shoulder. If the piece of stick between his hand and his shoulder be shortened is the pressure on his shoulder increased or diminished? Is the pressure on the ground affected thereby? Give reasons for your answer.

13. (a) Explain the construction and operation of a mercurial thermometer.

(b) Why is mercury preferably used for registering high temperatures?

(c) When a Fahrenheit thermometer reads (a) -9° , (b) 76° , what are the corresponding readings on a Centigrade thermometer?

Agriculture and Botany.

NOTE—The presiding examiner shall deliver all the specimens to one-third of the candidates at the beginning of the examination, transfer them to another third at the beginning of the second hour, and to the remaining third at the beginning of the third hour. Candidates are requested not to injure the specimens.

NOTE—Candidates must obtain at least 34 per cent. on each section.

Time—Three hours.

A

1. (a) Mention the various agencies that have operated in producing the various kinds of soil. How does each affect the character of soil?

(b) Define sand, clay, humus. How would you recognise a soil rich in sand, clay or humus?

2. (a) How are soils exhausted?

(b) In what ways may fertility be restored to soils?

(c) Describe fully two of these methods of restoration.

3. A wet stretch of land is separated from a river by a low ridge.

(a) Outline a plan for draining it and show by drawings the general positions of the drains.

(b) What benefits may be expected from this drainage?

4. Write a note on the production of carrots or cabbages, under the following heads.—Preparation of soil, modes of planting, care during growth, harvesting, storing.

5. (a) What are the effects of noxious weeds?

(b) Name three of the most troublesome weeds in the North-West Territories.

(c) Describe one of these weeds under the heads—Propagation, growth and methods of eradication.

6. What is smut? How is it spread? Describe the treatment of seed grain to prevent the growth of smut.

7. Give in outline the life history of any two of the following insects, and in relation thereto describe modes of destruction to be used by the farmer—Grasshopper, cut worm, plant louse (aphis).

B

8. Show which is the more serious loss to the plant,—the destruction or its seeds or the loss of its leaf buds. Describe the means provided for the protection and dissemination of the seeds of any two of the following—Maple, barley, wild rose and pea.

9. (a) Show how the different forms of indeterminate inflorescence may be developed from the raceme. Illustrate by diagrams the inflorescence of the tiger lily, buttercup and shepherd's purse.

10. Show that "the growth of leaves follows the lines of least resistance."

11. Outline the pollination of the anemone. What devices has nature provided to prevent self fertilisation?

12. What is the relation existing between the flower and the fruit? As fruits classify raspberry, strawberry, banana, cucumber, and tomato, giving reasons.

13. (a) Identify specimens A, B, C and D.

(b) Compare specimens A and B as to form, margins, surface and venation.

(c) Describe the floral envelopes of specimen D, and name three plants of the same order.

SECOND CLASS.

Poetical Literature.

Time—Three hours.

1. Discuss briefly the objection made against the Ancient Mariner, that "there is no proportion between the crime and the punishment."

2. Around, around, flew each sweet sound,
Then darted to the Sun;

Slowly the sounds came back again,
Now mixed, now one by one.

Sometimes adropping from the sky 5
I heard the sky lark sing ;
Sometimes all little birds that are,
How they seemed to fill the sea and air
With their sweet jargoning !

And now 'twas like all instruments 10
Now like a lovely flute ;
And now it is an angel's song
That makes the heavens be mute.

It ceased ; yet still the sails made on 15
A pleasant noise till noon,
A noise like of a hidden brook
In the leafy month of June,
That to the sleeping woods all night
Singeth a quiet tune.

(a) These stanzas have been called a “pleasing change from the horrors that precede.” Describe the preceding scene.

(b) State what devices the poet makes use of to secure beauty and variety of expression. Illustrate your answer by reference to this extract.

(c) What is the “sweet sound” referred to ? Account for the contrast in lines 2-3.

(d) Develop the full force of the simile in ll. 16-19.

(e) Scan the first stanza. Give the effect of any variation in the verse form.

3. Explain the connection of the following, and comment upon the imagery employed in the italicised portions—

(a) And when they reared the *elfish light*
Fell off in hoary flakes

(b) The moonlight *steeped in silentness*
The steady weathercock.

(c) *His great bright eye most silently*
Up to the moon is cast.

4. Comment upon the “Ancient Mariner” as regards (a) form, (b) unity, (c) language.

5. Him shall no sunshine from the fields of azure,
No drum beat from the wall,
No morning gun from the black fort's embrasure
Awaken with its call.

(a) Describe the poet's method of treatment in the Warden of the Cinque Ports and show that the above lines are in perfect agreement with this method.

(b) What lesson does Longfellow intend to draw from—

“ Nothing in Nature’s aspect intimated
That a great man was dead.”

(c) Show the picturing force of the italicised epithets—*driving* mist,
rippling pennons, *feverish* lips, *eye impartial*.

6. Give a picture of the background employed in the “ Old Clock
on the Stairs.” Write briefly upon the poet’s reflections in this poem.

7. (a) Though babbling only to the vale
Of sunshine and of flowers
Thou bringest unto me a tale
Of *visionary hours*.
- (b) One have I marked, the happiest guest
In all this *covert of the blest* ;
Hail to Thee, *far above the rest*
In joy of voice and pinion.
- (c) And I can listen to thee yet ;
Can lie upon the plain
And listen, till I do beget
That *golden time* again.

Examine the author’s meaning in each of the above stanzas. Explain
clearly the italicised portions.

8. Sweet Flower ! for by that name at last,
When all my reveries are past,
I call thee, and to that cleave fast,
Sweet, silent Creature !
That breath’st with me in sun and air,
Do thou as thou art wont, repair
My heart with gladness and a share
Of thy meek nature !

(a) “ by that name.” Give other names he has applied to the daisy.

(b) Show that the last four lines strike the keynote of Wordsworth’s
philosophy of nature !

9. Quote any one of Wordsworth’s sonnets. Examine it as to (a)
thought, (b) form.

Prose Literature.

Time—Two hours.

1. In “ Ivanhoe ” is our interest chiefly in the character and motives
of the actors, or in their outward actions ? Give illustrations in support of
your views.

2. What purpose is served by the conversation between Gurth and
Wamba in the first chapter ?

4. What contributions to the progress of the plot is made by the
quarrel between the Templar and the Palmer at Cedric’s table ?

4. What literary advantage is there in having Rebecca describe to Ivanhoe the assault on Front-de-Boeuf's castle, instead of having him see it himself?

4. Mention devices used by Scott to carry forward the reader's curiosity from chapter to chapter. Refer to specific instances.

6. Write a note on Scott's use of Nemesis (retributive justice) in this novel.

7. Describe Scott's use of Humour in this novel. Refer to instances in support of your view.

8. (a) Who is the heroine of this tale? Her function as such?

(b) Why did not Scott—the question of religion aside—end this tale with the marriage of Rebecca and Ivanhoe?

9. Comment upon the general accuracy of Scott's description of the differences between Norman and Saxon towards the end of the 12th century.

Essays.

Time—One and one half hours.

Write briefly—say three or four paragraphs—on three subjects selected from the list that follows. It is not the extent of your knowledge about the selected subjects so much as your ability to say a few things about them in a simple, clear, orderly and correct way that is the test.

1. One of the following—

(a) Description of Gurth the swineherd.

(b) Description of Rowena as she appeared at the dinner.

(c) Description of the Hall of Cedric, the Saxon.

2. Either of the following—

(a) Give in narrative form the substance of the conversation between Isaac and Gurth when making settlement after the tournament.

(b) Give in narrative form an outline of the conversation between Rebecca and Rowena after the marriage.

3. Either of the following—

(a) Discuss: "Now it is well known that a man may with more impunity be guilty of an actual breach either of real good breeding or of good morals than appear ignorant of the most minute point of fashionable etiquette."

(b) Discuss: "In the lion hearted King (Cœur-de-Lion) the brilliant but useless character of a knight of romance was in a great measure realised and revived."

Rhetoric and Grammar.

Time—Two hours.

(1) The Grand Master was a man advanced in age, as was testified by his long grey beard, and the shaggy grey eyebrows overhanging eyes,

of which, however, years had been unable to quench the fire. (2) A formidable warrior, his thin and severe features retained the soldier's fierceness of expression; an ascetic bigot, they were no less marked by the emaciation of abstinence, and the spiritual pride of the self-satisfied devotee. (3) Yet with these severer traits of physiognomy there was mixed somewhat striking and noble, arising, doubtless, from the great part which his high office called upon him to act among monarchs and princes, and from the habitual exercise of supreme authority over the valiant and high-born knights who were united by the rules of the Order. (4) His stature was tall, and his gait, undepressed by age and toil, was erect and stately. (5) His white mantle was shaped with severe regularity, according to the rule of Saint Bernard himself, being composed of what was then called burrell cloth, exactly fitted to the size of the wearer, and bearing on the left shoulder the octangular cross peculiar to the Order, formed of red cloth. (6) No vair or ermine decked his garment; but in respect of his age, the Grand Master, as permitted by the rules, wore his doublet lined and trimmed with the softest lambskin, dressed with the wool outwards, which was the nearest approach he could regularly make to the use of fur, then the greatest luxury of dress. (7) In his hand he bore that singular *abacus*, or staff of office, with which templars are usually represented, having at the upper end a round plate, on which was engraved the cross of the Order, inscribed within a circle, or orle, as heralds term it.

1. What is the general impression the author wishes to convey by this description?

2. Make an analysis of this description, showing the details selected to produce this impression. Comment specifically upon the arrangement of these details and their suitability.

3. Describe the structure of sentence (2) and show its rhetorical value here.

4. State the general use of that type of sentence structure of which (3) is an example. Show how (3) is connected in form with the preceding sentences.

5. Distinguish between "severe" and "stern;" "gait" and "carriage;" "valiant" and "brave."

6. Why is there a semicolon after "expression" in sentence (2) but a comma after "tall" in sentence (4)?

B

Fallen chernub, to be weak is miserable,
Doing or suffering; but of this be sure,
To do aught good never will be our task,
But ever to do ill our sole delight,
As being the contrary to His high will
Whom we resist.

1. Classify this sentence.

2. Separate into clauses and give the exact function and relation of each.

3. Give the grammatical function and relation of "fallen cherub," "to be weak," "of this," "being the contrary."

4. Parse "doing," "to do," "good," "as."

5. Give illustrations of attributive, appositive, and predicative adjectives in a sentence.

6. (a) Tell why the Midland, of the three great dialects in England in the fourteenth century, became the language of English literature.

(b) Describe and illustrate the Principle of Ease as it affects sound and form of words.

Reading (Principles).

Time—One hour.

1. "The distinction between speaking tones and singing tones should be clearly understood." What is the distinction?

2. "I know the ground, my lord," said I to Lord Uxbridge.

"Come along, Sir, come along," said he, as he threw his hussar jacket loosely behind him, to give freedom to his sword arm—"Forward, my men, forward; but steady, hold your horses in hand; threes about, and together charge."

"Charge!" he shouted; while, as the word flew from squadron to squadron, each horseman bent upon his saddle, and that mighty mass, as though instinct with but one spirit, dashed like a thunder bolt upon the column beneath them. The French, blown and exhausted, inferior beside in weight both of man and horse, offered but a short resistance. As the tall corn bends beneath the sweeping hurricane, wave succeeding wave, so did the steel clad squadrons of France fall before the nervous arm of Britain's Cavalry.

(a) What is meant by Pitch, Time, and Force?

(b) Which mode of Sentential Pitch is chiefly employed in reading this extract?

(c) Distinguish Quantity and Movement as time elements. Give illustrations from this extract.

(d) Distinguish Pauses as elements in the expression of thought, and feeling. Give illustrations of each from the extract.

3. Give illustrations from the extract of the different kinds of Diction, distinguishing them.

4. Divide the following words into syllables and mark the accent: adjectival, capillary, allies, candidature, preemptory, deficit, syringe, pumpkin, exquisite, blatant.

Arithmetic and Mensuration.

Time—Three hours.

1. (a) The ratio of two numbers is as $7\frac{1}{4} : 3\frac{1}{2}$. If their difference is 30, find the numbers.

(b) Find the difference between $1\frac{2}{3}$ and $\frac{3}{4}$ to three decimal places.

$$(c) \text{ Simplify } \frac{1\frac{2}{21} \cdot 3}{1\frac{3}{6}} \div \frac{1}{2\frac{3}{4} \cdot 6}.$$

2. (a) Deduce the rule for the division of decimals.

$$(b) \text{ Show that } .03\dot{6} = \frac{11}{300}$$

3. A miller receives an order for 25 tons of chop at $62\frac{1}{2}$ c. per cwt. What quantities of wheat at 75c. per cwt., oats at 30c. per cwt., and barley at 40c. per cwt. must be mixed in order that he may gain 25%? Explain why there may be more than one correct answer to this question.

4. In a partnership business A, B and C contribute respectively \$2000, \$3000, and \$2500. If at the time of settlement the total profits amount to \$4600, and B's money was in the business $1\frac{1}{3}$ times as long as A's and twice as long as C's, to what portion of the profits is each entitled?

5. A vessel was insured at 3% for $\frac{4}{5}$ of its value, and its cargo was insured at 4% so that in case of loss the full value of the cargo together with the premium paid would be recovered. The value of the cargo was 48% of the value of the vessel. After one premium was paid the vessel with its cargo was burned and the insurance company's net loss was \$25,120. Find the value of the vessel.

6. A bought a piece of property from B for \$1200, and, as he could raise only \$460, B agreed to accept this amount on condition that it included the interest (payable in advance) on a note given for $1\frac{1}{2}$ years at 5% for the balance. Find the face value of the note.

7. A merchant pays advalorem and specific duties on a consignment of silk. Allowing for an average fractional waste per yard, show how you would compute the selling price per yd. to enable the merchant to gain a certain per cent.

8. A grain dealer sends cash and wheat together amounting to \$2084 to a commission merchant with instructions to sell the wheat at a commission of 2% and invest the proceeds together with the cash forwarded in flour at a commission of 3%. If the value of the flour purchased was \$2000, what did the wheat realise?

9. (a) Find the area of a rhombus whose diagonals are 10 ft. and 20 ft.

(b) Compare the area with that of (1) a square, (2) a circle, having equal perimeters.

(c) Find the altitude of an equilateral triangle which is equal in area to a rhombus.

10. (a) A bin 10 ft. square at the top and 4 ft. square at the bottom is 4 ft. deep. If a cubic ft. contains $7\frac{1}{2}$ gallons how many bush. of wheat will the bin hold?

(b) Find the amount of tin required to line the inner surface of the bin.

Algebra.

Note.—Candidates must obtain at least 34 per cent. on each section.

Time—Three hours.

A

1. (a) Divide $a^3 + b^3 + c^3 - 3abc$ by $a + b + c$, using brackets.
 (b) Write out a similar expression that can be divided by $2a + b + \frac{1}{2}c$. Give the quotient.

(c) Infer the factors of $8x^3 + \frac{y^3}{8} + 1 - 3xy$ from (a).

2. Show that twice the product of the squares of two numbers, together with the fourth power of the sum of the numbers, is equal to the sum of their fourth powers, together with four times their product multiplied by the square of their sum.

3. (a) Expand without multiplying $(x^{2m} - x^m)^3$, and $(x^m + x^{2m})^3$.

(b) Find the algebraical expression which will exceed the smaller of these expressions by as much as it falls short of the greater.

4. Resolve into factors: (1) $x^3y - 2xy^3 + x^2y^2$,

(2) $54x^4y^7 + 16xy^{10}$,

(3) $x^2 - 11 + \frac{1}{x^2}$.

5. (a) If when any quantity a is divided by b the remainder is c , show that every factor of a and b is also a factor of c .

(b) When can any factor be cancelled from c without altering the value of the H.C.F. of a and b .

6. A farmer mixes wheat worth 80c. per bush. with barley worth 30c. per bush. and produced a mixture worth 50c. per bush. Had he used instead $1\frac{1}{2}$ times the quantity of wheat and 30 more bush. of barley the mixture would still have been worth 50c. per bush. What quantities of wheat and barley were contained in the first mixture?

B

7. (a) If $\frac{a-b}{ay+bx} = \frac{b-c}{bz+cx} = \frac{c-a}{cy+az} = \frac{a+b+c}{ax+by+cz}$ then each fraction is equal to $\frac{1}{x+y+z}$ when $a+b+c$ is not $=0$.

(b) Show the necessity of the condition $a+b+c$ is not $=0$.

8. (a) Find the roots of the equation $ax^2 + bx + c = 0$.

(b) From your work show that a quadratic equation has two and only two roots.

(c) Under what conditions will the root obtained be (i) rational, (ii) imaginary?

(d) Make use of the roots found above in solving $3x^2 + 2x - 8 = 0$.

9. Solve : (1) $\frac{x+4}{x-4} + \frac{x-4}{x+4} = \frac{10}{3}$

(2) $1 \cdot (3+x) + 1 \cdot x = \frac{5}{1-x}$

(3) $\frac{x+y}{7} = xy = \frac{x^2+y^2}{25xy}$

10. (a) Prove that $\frac{(ab^x)^y}{b^z} = a^y b^{xy-z}$ when y is greater than z .

(b) Is it necessary that y should be greater than z to obtain this result? Explain.

11. A and B have each a number of sheep, A having 20 less than B. They sell their sheep to each other at different prices per head and the account between them is settled by B giving A \$40. If B's sheep sold at A's price would have amounted to \$300, and A's sheep sold at B's price to \$160, find the total number of sheep they had.

12. The diagonal of a square described on the sum of the two equal sides of an isosceles triangle is z rods in length. If the altitude of the triangle is x yards, express the number of square feet in the parallelogram, whose base is double that of the triangle and whose altitude is half as great.

Geometry.

Note.—Candidates must obtain at least 34 per cent. on each section.

Time—Three hours.

A

1. According to the subject matter of which they treat, into what groups may the propositions of Book I be divided? State the purpose of each group.

2. Prove that in a triangle if the perpendiculars from each extremity of the base on the opposite side be equal, the triangle is isosceles.

3. D and E are the middle points of the sides AB, AC of a triangle, and CD, BE intersect at F. Show that the triangle BFC is equal to the quadrilateral ADFE.

4. (a) Prove that if a straight line be divided into two equal, and also externally into two unequal segments, the rectangle contained by the unequal segments is equal to the difference between the squares on the line between the points of section and the square on half the line. II. 6.

(b) Give an arithmetical illustration of proposition (a).

(c) Deduce algebraically proposition (a) from proposition II. 4.

(d) ABCD is a rhombus; from any point P in the diagonal AD a straight line is drawn to point Q in the diagonal CB produced. Show that the rectangle contained by the segments AP, PD, together with the square on PQ is equal to the rectangle contained by the segments CQ, QB together with the square on a side of the rhombus.

5. (a) Describe a square equal to a given rectilineal figure. II. 14.

(b) Produce a given straight line so that the rectangle contained by the whole line thus produced and the part produced may be equal to the square on another given line.

B.

6. (a) Find the centre of a given circle. III. 1.

(b) What property of a circle is shown in (a)?

(c) Describe a circle which shall have its centre in a given straight line and pass through two given points.

7. (a) The straight line drawn perpendicular to a diameter of a circle from either end of it, is a tangent to the circle; and every other straight line drawn through the same point cuts the circle. III. 16.

(b) Define tangent, chord, sector.

(c) Draw a circle to touch a given line at a given point and to pass through another given point.

8. (a) If two chords of a circle cut one another, the rectangle contained by the segments of the one shall be equal to the rectangle contained by the segments of the other. Conversely, if two straight lines cut one another so that the rectangle contained by the segments of the one is equal to the rectangle contained by the segments of the other, the four extremities of the two straight lines are concyclic. III. 35.

(b) Explain what is meant by the "internal potency of a point with respect to a circle." What is the value of this "potency of a point with respect to a circle" according as the point is inside, on the circumference, or outside the circle?

(c) If two circles intersect prove that their common chord bisects their common tangent.

Canadian and British History.

Time—Two hours.

1. Give a concise account of Clive's career in India and an estimate of his services to Great Britain.

2. Describe the condition of England at the time of Walpole's ascendancy. Remark on his policy as finance minister noting any measures advocated by him in pursuance of this policy.

3. Give a brief account of the events in which Simon de Montfort took part as the champion of English freedom.

4. Briefly but clearly state the main "Executive Abuses" that preceded the rebellion of 1837.

5. What plans of government were adopted by England in dealing with her newly acquired possession of Canada? Note especially the Quebec Act.

6. State fully the causes which led the people of the thirteen American colonies to declare their independence.

7. Tell what you can of the local government of the North-West Territories since 1876.

General History.

Time—Two hours.

1. Write briefly upon the origin, religion, and caste system of the Hindoos.

2. Account for the unprogressive character of all the Oriental nations.

3. Contrast the Spartan and Athenian forms of government.

4. State the causes which, after Pericles' death, brought about a rapid decline in the greatness of Athens.

5. Write a concise account of the civil war between Cæsar and Pompey.

6. Give some account of the Roman world under Augustus as regards (a) its extent, (b) its government, (c) social condition of the people.

7. Briefly but clearly narrate the circumstances attending the final dismemberment of the Roman Empire.

Geography.

Time—Two hours.

1. (a) What is meant by a total eclipse of the sun? Illustrate your answer by drawings. What is the total duration of such an eclipse? Show what part of the earth's surface would be affected by a total solar eclipse.

(b) Account for the different phases of the moon. Show that we have longer periods of moonlight in winter than in summer. Why can one side of the moon never be seen from the earth?

2. If the axis of the earth were at right angles to the present axis how would our days and seasons be affected? Where would you then locate the zones of heat?

3. Distinguish tides, waves and ocean currents as to cause, movement and effect.

4. Account for the origin of glaciers. What is their effect upon climate and soil? In the development of the great central plain of North America show which has exerted the greater influence, glaciers or rivers.

5. How are islands formed? Describe the different kinds giving examples of each kind. How may islands modify the type and character of animal life?

6. Describe the drainage system of the North-West Territories and show the relation thereto of wood belts, agriculture and stock raising.

7. Account for the location of the Australian Desert. What structural changes would convert this desert into a fertile region?

8. Outline the drainage of Western Europe. Describe fully the basin of one of its principal rivers indicating the method of its growth and showing its importance industrially.

9. Under the heads—Surface, climate, chief industries and imports, write a note on the geography of British Columbia.

11. Draw a map of Africa south of latitude 22° showing the drainage, mining regions, grazing lands, British possessions and six towns brought into prominence through the Boer war.

10. Give the location of the following and say what each is noted for—Auckland, Dantzig, Lyons, Esquimaux, Port Said, Nijni Novgorod, Welland Canal, Intercolonial Railway.

Physics.

NOTE—Credit will be given for neat, illustrative drawings.

Time—Two and one half hours.

1. (a) In flying a kite, what forces are acting upon the kite when it is at rest in the air?

(b) Draw a diagram to illustrate the direction of these forces.

(c) Why is the string not attached to the bottom of the kite?

2. (a) State the law of the buoyant force of fluids.

(b) What are the properties of fluids that produce buoyancy?

(c) Describe a method of determining the specific gravity of a sponge?

(d) A kilogram of iron (Sp. G. 7.5) floats in mercury (Sp. G. 13.6); find the volume of iron above the surface of the mercury.

3. (a) Describe the construction of a mercurial air pump and explain its action.

(b) Wherein lies its advantage over the piston rod air pump?

4. (a) Explain the advantage gained by using a moveable pulley instead of a fixed pulley.

(b) Show that this advantage may act as a corresponding loss.

5. A man weighing 150 pounds stands in a scale attached to a moveable pulley, and a rope having one end fixed passes under this pulley and then over a fixed pulley. Find what force the man must exert on the free end of the rope, the strings being parallel, in order to support himself.

6. (a) Distinguish distillation, ebullition and vaporisation.

(b) Using diagrams, describe a method of distilling water and state what takes place during the process of distillation.

7. Define electrical potential and prove that the potential of a conductor is the same for all points.

8. (a) What is meant by the resistance of a conductor? Show how it may be measured.

(b) State with reasons how cells should be combined so as to obtain the strongest possible current; (i) when the external resistance is excessive, (ii) when the internal resistance is excessive.

9. Describe and explain the method of preparing electrotype plates.
10. What is meant by a 16 candle power incandescent light ?
 - (b) Account for the use of carbon filaments in electric lamps.
 - (c) Show why the length of time during which these lamps may be used is limited.
11. In the ordinary tin whistle what effects have the length of the tube, and the size and position of the openings upon the quality, intensity and pitch of the sounds produced ?
12. (a) Account for the differences of the images produced by concave and convex mirrors.
 - (b) Compare the construction and working of the microscope and telescope.
 - (c) Upon what principles does each depend for its effectiveness ?

Agriculture and Botany.

NOTE—The presiding examiner shall deliver all the specimens to one-third of the candidates at the beginning of the examination, transfer them to another third at the beginning of the second hour, and to the remaining third at the beginning of the third hour. Candidates are requested not to injure the specimens.

NOTE—Candidates must obtain at least 34 per cent. on each section.

Time—Three hours.

A

1. Outline the general effects of tillage upon upland, swamp land and alkali land.
2. What are the effects of frost upon crops, (i) just in leaf, (ii) at time of ripening ?
 - (a) How does each of the following affect frost—general cultivation, forests, and land slopes ?
3. Compare a crop of peas with a crop of wheat as to favourite soils, place in rotation, preparation of soil and harvesting. How would you determine when a crop of wheat was ready to cut.
4. State the chief advantages of the process of ensilage. What crops are best suited for ensilage and what changes do they undergo in the silo ?
5. Give illustrations of the helpfulness of birds to the farmer.
6. What kind of land is suitable for sheep raising ? Why ? Describe a profitable breed of sheep for the North-West Territories. Write notes on their care during winter.
7. Discuss tree culture in the North-West Territories under the heads—necessity for, suitable varieties, transplanting, and pruning.

B

8. Show how the roots of any two of the following are adapted in structure and modification to the purposes of their life—couch grass, Solomon's seal, poplar, celery.

9. (a) What is meant by phyllotaxis? What is its importance to the plant? Indicate the relations existing between phyllotaxis and the structure and the arrangement of leaves.

(b) Distinguish exogenous and endogenous stems. Draw cross-sections of each to illustrate the arrangement of their tissues.

10. Describe, using drawings, the internal structure and development of a leaf.

11. Explain, using drawings, hypogynous, epigynous and perigynous stamens. What effect has each upon the pollination of the flower?

12. Tell, with reasons, how you would determine the classification and name of a flower unknown by you.

13. (a) Identify specimens A, B, C and D.

(b) Compare specimens A and B as to form, margins, surface and venation. Account generally for their differences in form.

(c) State the uses to the parent plant of specimen C.

(d) Describe the floral envelopes of specimen D and name three plants of the same order. Give the characteristics of this order.

FIRST CLASS.

Literature (First Paper).

Time—Two hours.

1. Explain clearly the following passages—

(a) Yet when we can entreat an hour to serve,
We would spend it in some words upon that business,
If you would grant the time.

(b) If you shall cleave to my consent, when 'tis,
It shall make honour for you.

(c) To be thus is nothing ;
But to be safely thus. Our fears in Banquo
Stick deep ; and in his royalty of nature
Reigns that which would be feared.

(d) The feast is sold
That is not often vouched, while 'tis a making,
'Tis given with welcome.

2. Write a brief description of Macbeth, comparing him with Lady Macbeth, and with Banquo.

3. (a) Infirm of purpose !
Give me the daggers : the sleeping and the dead
Are but as pictures ; 'tis the eye of childhood
That fears a painted devil.

(b) Had he not resembled
My father as he slept I had done it.

8. Give the substance of Milton's reflections on Fame in Lycidas.
9. Quote Milton's sonnet "On His Blindness" and prove from it his mastery of metre.
10. (a) Explain in what connexion each of the following passages occurs in *Comus* :
 - (i) We that are of purer fire
Imitate the *starry quire*,
Who in their mighty watchful spheres
Lead in swift round the months and years.
 - (ii) But for that damn'd magician, let him be girt
With all the grisly legions of that troop
Under the sooty flag of *Acheron*.
 - (iii) This I have learnt
Tending my flocks hard by i' th' hilly *crofts*,
That brow this bottom-glade.
- (b) Write notes upon the italicised words.
11. Outline briefly the function of the Moral Plays or Moralities in the development of the Drama.

Literature (Second Paper).

Time—Three hours.

A

1. (a) In the development of the plot what purpose is served by the archery contest (Locksley and Hubert).
(b) How is climax secured in this scene?
2. (a) Describe the part played by Isaac, the Jew, in working out the plot of this novel.
(b) How far does he represent the Jew of his day in England?
3. Write a note on Scott's portraiture of ecclesiastics in "Ivanhoe."
4. (a) Which do you consider the finer from an artistic standpoint, the scene between Rowena and De Bracy or that between Rebecca and the Templar at Torquilstone? Why?
(b) Show how the contrast in character between Rebecca and Rowena is exhibited.

B

" And now the Storm-Blast came, and he
 Was tyrannous and strong ;
 He struck with his o'ertaking wings,
 And chased us south along.

 With sloping mast and dipping prow,
 As who pursued with yell and blow
 Still treads the shadow of his foe,

And forward bends his head,
The ship drove fast, loud roared the blast,
And southward aye we fled.

And now there came both mist and snow,
And it grew wondrous cold :
And ice, mast high, came floating by,
As green as emerald.

And through the drifts the snowy clifts
Did send a dismal sheen :
Nor shapes of men nor beasts we ken—
The ice was all between.

The ice was here, the ice was there,
The ice was all around :
It cracked and growled, and roared and howled,
Like noises in a swound !

1. Connect this extract with the poem.
2. What figure of speech in the first stanza ? Discuss its suitability and comment upon "roared" in the second stanza.
3. With the first two lines of the fifth stanza compare—

Alone, alone, all, all alone,
Alone on a wide, wide sea !

What effect is produced by this repetition ? Quote other lines from this poem in which this poetic artifice is used similarly.

4. Compare the movement in the second stanza with that in—

The fair breeze blew, the white foam flew,
The furrow followed free :
We were the first that ever burst
Into that silent sea.

Account for any differences.

5. Examine the suitability of the sound effects to the theme in the third line of the last stanza.
6. What effects are produced by the use of such words as *aye*, *clifts*, *ken*, *swound* ?

C

And she shall lean her ear
In many a secret place
Where rivulets dance their wayward round,
And beauty born of murmuring sound,
Shall pass into her face.
And vital feelings of delight
Shall rear her form to stately height
Her virgin bosom swell.

1. Of what philosophy is this a felicitous expression ?

2. Name the poem from which the following is taken and show its connection—

To be a Prodigal's Favourite—then, worse truth,
A Miser's Pensioner—behold our lot!
O Man, that from thy fair and shining youth
Age might but take the things Youth needed not!

3. Complete the stanza of which the following are the first two lines—

I saw her upon nearer view,
A Spirit, yet a Woman too!

4. To the last point of vision, and beyond,
Mount, daring warbler!—that love prompted strain
—'Twixt thee and thine a never failing bond—
Thrills not the less the bosom of the plain:
Yet might'st thou seem, proud privilege! to sing
To sing all independent of the leafy spring.— *Wordsworth*.

Up with me! up with me into the clouds!
For thy song, lark, is strong;
Up with me, up with me into the clouds!
Singing, singing.
With clouds and sky about thee ringing,
Lift me, guide me, till I find
That spot which seems so to thy mind.— *Wordsworth*.

Higher still, and higher
From the earth thou springest
Like a cloud of fire;
The blue deep thou wingest,
And singing, still dost soar, and soaring, ever singest.— *Shelley*.

(i) Compare these extracts as to (a) thought, (b) feeling, (c) melody, (d) imagery.

(ii) Quote what seems to you the finest line or lines

Essays.

Time—One and one half hours.

Write briefly—say three or four paragraphs—on three subjects selected from the list that follows. It is not the extent of your knowledge about the selected subjects so much as your ability to say a few things about them in a simple, clear, orderly and correct way that is the test.

1. One of the following—

- (a) Description of Cedric, the Saxon.
- (b) Description of Rebecca as she appeared at Ashby.
- (c) Description of the field of Ashby.

2. Either of the following—

(a) Give in narrative form the substance of the conversation between Rowena and Rebecca after the marriage.

(b) Give in narrative form the substance of the conversation between the Grand Master and the King after the judicial combat.

3. Either of the following—

(a) Discuss : “ Chivalry ! . . . she is the nurse of pure and high affection—the stay of the oppressed, the redresser of grievances, the curb of the power of the tyrant.”

(b) Discuss : “ There could in fact have been no such state of society as that of which the story before us (*Ivanhoe*) professes to give but samples and ordinary results.”—*Edinburgh Review*.

Rhetoric and Grammar.

Time—Two hours.

A

(1) “ In France,” says M. Sainte-Beuve, “ the first consideration for us is not whether we are amused and pleased by a work of art or mind, nor is it whether we are touched by it. (2) What we seek above all to learn is, whether *we were right* in being amused with it, and in applauding it, and in being moved by it.” (3) Those are very remarkable words, and they are, I believe, in the main quite true. (4) A Frenchman has, to a considerable degree, what one may call a conscience in intellectual matters ; he has an active belief that there is a right and a wrong in them, that he is bound to honour and obey the right, that he is disgraced by cleaving to the wrong. (5) All the world has, or professes to have, this conscience in moral matters. (6) The word *conscience* has become almost confined, in popular use, to the moral sphere, because this lively susceptibility of feeling is, in the moral sphere, so far more common than in the intellectual sphere ; the livelier, in the moral sphere, this susceptibility is, the greater becomes a man’s readiness to admit a high standard of action, an ideal authoritatively correcting his every day moral habits ; here, such willing admission of authority is due to sensitiveness of conscience. (7) And a like deference to a standard higher than one’s own habitual standard in intellectual matters, a like respectful recognition of a superior ideal, is caused, in the intellectual sphere, by sensitiveness of intelligence. (8) Those whose intelligence is quickest, openest, most sensitive, are readiest with this deference ; those whose intelligence is less delicate and sensitive are less disposed to it. (9) Well, now we are on the road to see why the French have their academy and we have nothing of the kind.

1. What is the topic of this paragraph ?
2. What is the purpose of the negative statements in the first sentence ? Comment upon the value of this mode of beginning a paragraph.
3. What is the rhetorical value of the repetition in the second sentence.
4. What is the use of the second part of the fourth sentence ?
5. How is the seventh sentence related in form to the sixth sentence ? What is the value of this form of relation ?
6. Describe the structure of the eighth sentence and comment upon the values of this type.

7. Draw a tabular form of this paragraph which shall show how the thought progresses, what is principal, what illustrative, what summarising.

B

If it were done when 'tis done, then 'twere well
It were done quickly : if the assassination
Could trammel up the consequence, and catch
With his surcease success : that but this blow
Might be the be-all and the end-all here,
But here upon this bank and shoal of time,
We'd jump the life to come.

1. Classify this sentence.
2. Separate into clauses and give the exact function and relation of each.
3. Comment upon the uses of the subjunctive in this extract.
4. Write a note on Celtic influence upon the English of the Anglo Saxon period. Account for it.
5. Outline the effects of the Norman Conquest upon the Anglo Saxon tongue, 1100-1500. Connect the changes with the political history of the time.
6. Illustrate inflectional changes in modern English through the history of the italicised forms in

It *blesseth* him that gives.
The house is *being built*.

Algebra.

NOTE : Candidates must obtain at least 34 per cent. on each section.

Time—Three hours.

1. (a) What is the condition that $x+a$ should be the factor of ax^3+bx^2+cx+d ?
- (b) Give, in outline, a method of finding the factors of the following expressions and factor them—
 - (1) $2b^2c^2+2c^2a^2+2a^2b^2-a^4-b^4-c^4$.
 - (2) $\frac{x^3}{8}-y^3+\frac{z^3}{27}+\frac{xyz}{2}$.
- (c) Deduce the condition that makes $a+b$ a factor of a^m+b^n . Write down the other factor.
2. (a) Show that, if the sum of all the products, taken two at a time, of three consecutive integers is increased by one, the sum is three times a perfect square.
- (b) If the third of these consecutive integers is expressed by a^m-b^n-1 infer from (a) the square root of the perfect square obtained.
3. If $\frac{m}{x}+\frac{n}{y}+\frac{r}{x}$ and $\frac{x^2}{a^2}+\frac{y^2}{b^2}+\frac{z^2}{c^2}=1$, prove that

$$\frac{m^2}{a^2}+\frac{n^2}{b^2}+\frac{r^2}{c^2}=\frac{m^2+n^2+r^2}{x^2+y^2+z^2}.$$

4. (a) What are irrational equations? State the general method of solving them.

(b) Solve $\sqrt{x} + \sqrt{5x+1} = 5$, and show that the obtained values of x will satisfy the equation.

(c) Form the equation whose roots are $a+b$ and $\frac{1}{a} + \frac{1}{b}$ when a and b are the roots of $x^2 - 11x + 22 = 0$.

(d) Solve (1) $2x^2 + 3xy = 56$ and $7y^2 - 2xy = 12$.

(2) $x^m(x^{2m} - 4x^m - 1) + 4 = 0$.

5. Two trains start from Moose Jaw and Winnipeg simultaneously. A travels 10 miles an hour more than B. If the two places are situated 400 miles apart, and the rate per hour of the faster train is equal to $3\frac{3}{4}$ times the number of hours that elapse before the trains meet, find the rates of the trains.

B

6. (a) From the Index Law deduce the meaning of $(a^x)^y$, (1) when y is a positive integer, (2) when $y = -\frac{p}{q}$, a negative quantity.

(b) Simplify $(x^{\frac{n}{2}}y^{\frac{m}{3}}z^{\frac{p}{4}})^{-2} + (x^{-n}y^{-m}z^{-p})^{-3} + (x^{2n}y^{3m}z^{4p})^{-1}$.

(c) Find the rationalising factor of $4\sqrt{a} + 4\sqrt{b}$.

7. (a) Explain the meaning of the terms (1) a ratio of greater inequality, (2) incommensurable numbers.

(b) If the area of a circle varies as the square of its radius, find the radius of a circle which is equal in area to the sum of the areas of two circles, whose radii are 3 and 4 inches respectively.

8. If the 6th term of an A.P. is -2 , and the sum of the first 8 terms is -10 , find the n^{th} term.

9. Show that the number of combinations of n different things taken r at a time can be found independently of the number of permutations.

10. (a) Deduce the formula called the Binomial Theorem when n is any positive integer.

(b) Find the value of the sum of the coefficients in the expansion of $(1+x)^n$.

(c) What is the greatest term in the expansion of $(1+2x)^{10}$ when $x = \frac{1}{3}$?

11. In how many different ways can a class of 15 pupils be arranged in 5 rows with three in each row, so that no two shall be twice in the same row?

12. The numerator and denominator of one fraction are each greater by 2 than the corresponding terms of a second fraction. The sum of the fraction is $2\frac{5}{6}$; but if the denominators were interchanged their sum would be 3. Find the fractions.

Geometry.

NOTE: Candidates must obtain at least 34 per cent. on each section.

Time—Three hours.

1. (a) Prove that if the sides of a rectilinear figure, which has no reentrant angle, are produced in order, all the exterior angles so formed are together equal to four right angles.

(b) Show the use that may be made of propositions (a) in (1) inscribing rectilinear figures in a circle, (2) equisecting a right angle.

2. (a) Prove that in every triangle the square on the side opposite an acute angle is equal to the sum of the squares on the other two sides diminished by twice the rectangle contained by either of those two sides and the projection on it of the other side. II. 13.

3. From any point in the base of a right angled triangle a line is drawn at right angles to the hypotenuse, prove that these lines are divided into segments whose rectangles differ by the square on the line so drawn.

4. (a) Draw a tangent to a given circle from a given point. III. 17.

(b) Is the tangent limited or unlimited at the point of contact with the circle? Give reasons for your answer.

(c) Draw a common tangent to two given circles.

5. (a) Prove that if from a point without a circle two straight lines be drawn, one of which cuts the circle, and the other meets it, and if the rectangle contained by the secant and its external segment be equal to the square on the line which meets the circle, that line shall be a tangent. III. 37.

(b) Explain what is meant by the potency of a point with respect to a circle. What is the value of this potency of a point with respect to a circle according as the point is inside, on the circumference, or outside a circle?

B.

6. Find a point in the produced diameter of a given circle, from which the tangent drawn to the circle shall be equal to a given straight line.

7. What is the purpose of Bk IV? Show that it is not complete.

8. (a) Inscribe a circle in a given triangle. IV. 4.

(b) Show that the centres of the inscribed circle and of one of the escribed circles lie in the same straight line.

(c) If the inscribed circle in the triangle ABC touches the sides at DEF, (i) show that the triangle DEF is acute angled. (ii) Express the angles of DEF in terms of the angles of ABC.

9. (a) Describe an isosceles triangle having each of the angles at the base double of the third angle. IV. 10.

(b) What regular figures can be inscribed in a circle by proposition (a)?

(c) Show that the smaller circle in your construction, proposition (a), is equal to the circle which would circumscribe the triangle you have constructed.

10. (a) Explain the following terms and phrases—Multiple; sub-multiple; ratio of one magnitude to another.

(b) If A, B, C, D be four magnitudes, when is the ratio A : B equal to C : D?

11. (a) Prove that if the vertical angle of a triangle be bisected by a straight line which cuts the base, the segments of the base shall have to one another the same ratio as the remaining sides of the triangle. VI 3.

(b) If BC, the base of a triangle ABC, be cut by the bisector of the internal vertical angle at D, and by the bisector of the external vertical angle externally at E, show that BE, DE, DC, are in harmonical progression.

Trigonometry.

Time—Three hours.

1. An isosceles triangle has a vertical angle eight times one of its equal angles: find the degrees, grades and units of a circular measure in its vertical angle.

2. Define the ratios of an angle of 90° . What convention is necessary to adapt your definition to any angle?

3. Solve the following—

(i) Construct an angle whose tangent is $\frac{a}{b}$ where a and b may be any numbers.

(ii) Show the quadrants in which the angle will lie according as a and b are positive or negative.

(iii) Construct an angle whose cotangent is $\frac{\sqrt{7}}{1+\sqrt{5}}$

4. Prove the following relations—

$$(i) (3-4\sin^2 A)(1-3\tan^2 A) = (3-\tan^2 A)(4\cos^2 A-3).$$

$$(ii) \cot^2 A - \cos^2 A = \cos^4 A \operatorname{cosec}^2 A.$$

5. Prove any two of the following—

$$(i) \sin(A-B) = \sin A \cos B - \cos A \sin B.$$

$$(ii) \sin A - \sin B = 2 \cos \frac{A+B}{2} \sin \frac{A-B}{2}.$$

$$(iii) \cos 3A = 4\cos^3 A - 3\cos A.$$

6. Point out the advantages of base 10 in a system of logarithms.

Find the logarithm of $\left(\frac{.00512}{.428571}\right)^{\frac{1}{5}}$ having given

$\log 3 = .4771213$, $\log 5 = .6989700$ and $\log 7 = .8450980$.

7. In any triangle prove the following relations—

$$(i) \quad \frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}.$$

$$(ii) \quad \tan \frac{A-B}{2} = \frac{a-b}{a+b} \cot \frac{C}{2}.$$

$$(iii) \quad \sin \frac{A}{2} = \sqrt{\frac{(s-b)(s-c)}{bc}}, \text{ where } S = \frac{1}{2}(a+b+c).$$

8. Two railways intersect at an angle of $35^{\circ}-20'$; from the point of intersection two trains start together, one at the rate of 30 miles an hour; find the rate of the other train so that after $2\frac{1}{2}$ hours the trains may be 50 miles apart. Show that there are two velocities that will satisfy this condition and calculate approximately the greater of them having given :

$\log 2 = \cdot 30103$	$L \sin 60^{\circ}-10' = 9.93827$
$\log 3 = \cdot 47712$	$L \sin 84^{\circ}-30' = 9.99800$
$\log 8606 = 3.93479$	$L \sin 35^{\circ}-20' = 9.76218$

9. Find the radius of a circle described about a triangle in terms of the sides of the triangle.

General History.

Time—Two hours.

1. Compare Egyptian and Persian civilisation under the following headings—religion, government, and literature.

2. Sketch the Peloponnesian War.

3. State fully the circumstances that led to the Rise of the Dutch Republic.

4. What were the evils of feudalism? Write briefly upon the “three main influences that undermined it.”

5. Briefly but clearly describe the Thirty Years' War.

6. What was the immediate object of the Crusades? State some of the effects of these expeditions.

7. (a) Write somewhat fully upon the character, foreign policy, and domestic policy of Cardinal Richilieu.

(b) Briefly compare him with Cardinal Wolsey.

Constitutional History.

Time—Two Hours.

1. Describe the political history of Canada under the Act of Union, 1840-1867.

2. Tell what you know of the “power of disallowance” and “making of treaties” under the Canadian Constitution.

3. Briefly outline the functions of (a) the Governor General, (b) the Lieutenant Governor.

4. (a) Give the qualification of a senator.

(b) With respect to what matters has the Senate no powers of legislation?

5. What are the checks and balances in the British Constitution?

6. Enumerate the various functions of the British House of Commons and briefly discuss each.

7. Contrast the Cabinet system of government with the Presidential as to (a) elasticity, (b) permanency, (c) efficiency, (d) responsibility.

Physics.

Time—Two and one half hours.

1. Define velocity and acceleration. Neglecting friction, find the acceleration of a ball of lead (Sp. gr. 11.3) sinking in water, and a ball of wood (Sp. gr. 0.6) rising in water.

2. A ship sailing in a southward current is heading in a due east direction from a lighthouse. At the end of four hours the ship is found to have gone 40 miles in a direction 30° south of east. Find the rate of the current and the velocity of the ship.

3. (a) Explain the relation of cohesion and adhesion to capillary phenomena.

(b) If two glass tubes are inserted, one into water and the other into mercury, describe the surfaces of the liquids in each case (1) inside the tubes, (2) about the outsides of the tubes.

4. (a) Show that temperature does not always signify quantity of heat.

(b) Upon what does the quantity of heat in a body depend?

(c) Describe at least two methods which tend to establish equalisation of temperature.

5. (a) Upon what principles does the action of the siphon depend?

(b) What is the limit of its action?

(c) Do the arms of the siphon require to be of equal bore?

(d) Show how you would siphon gases lighter than air. Draw diagrams to illustrate your answers.

6. (a) Define what is meant by the "latent heat" of water, and state how you would proceed to measure it experimentally.

(b) What becomes of the kinetic energy required to liquefy ice? Explain.

(c) Some ice is to be kept as long as possible in a warm room. Describe, and give reasons for, the construction of a suitable box.

7. (a) In what respects do dynamo electric machines differ from electro magnetic machines?

(b) Where does the magnetism of the field magnets come from in the former?

(c) Where does the dynamical energy of the currents come from in the latter?

8. There are 20 cells (E. M. F. = 1.5 volt ; $r = 0.5$ ohm each) in a circuit in which the external resistance is 10 ohms. Find the strength of the current which flows (a) when the cells are joined in simple series ; (b) when the cells are arranged in multiple arc ; (c) when the cells are arranged two abreast.

9. (a) Distinguish forced and sympathetic vibrations.

(b) Show how each is produced.

(c) How many sound waves unite to produce a sound louder or weaker than either alone would produce, or to cause silence ?

10. (a) Distinguish between a shadow and an image.

(b) Show how each is produced.

(c) Place a lighted candle in an otherwise dark room some distance from a concave mirror and determine the position of the focus of the light waves, (i) when the candle is brought nearer the mirror, (ii) when the flame is between the centre of curvature and the principal focus, (iii) when the flame is at the principal focus. Give reasons for your answer in each case.

11. (a) How may a ray of white light be (i) decomposed, (ii) recombined.

(b) Upon what does colour depend ?

(c) Explain how the colour of a substance may be analysed.

(d) Why are the colour tints at sunset red and yellow ?

(e) Explain the phenomena of the rainbow.

Chemistry.

Time—Two hours.

1. (a) State Avogadro's Law and describe and explain at least two simple experiments that verify it.

(b) "This law is considered the most important in the whole range of chemical science." Show its importance.

2. (a) Explain the difference between the atomic and molecular weights of an element.

(b) How may the former be ascertained ?

3. (a) Explain the action of MnO_2 in the production of O from $KClO_3$.

(b) Classify oxides and state the characteristic properties of each class.

4. Give equations to illustrate the chemical reaction that takes place in each of the following experiments and name the resulting products—

(a) Add a little granulated zinc and iron filings to a strong solution of caustic potash.

(b) Fill a dry bottle with carbon dioxide and place it mouth downwards over a bottle of ammonia.

(c) Heat a small piece of potassium in a deflagrating spoon and plunge it into a bottle of dry hydrochloric acid gas.

5. (a) Outline the method of obtaining phosphorus from bone ash. Represent by equations all the reactions that take place.

(b) Enumerate the distinguishing properties of red and yellow phosphorus and explain how the former may be obtained from the latter.

6. Describe the laboratory preparation of hydrofluoric acid. State the properties and uses of this acid.

7. (a) Describe Reinch's test for arsenic.

(b) Name an antidote to arsenic poisoning and explain its action.

8. Explain any method by means of which hard water may be rendered soft.

9. (a) Enumerate the different modes of chemical action.

(b) Which of the modes is followed in the chemical actions that take place in the experiments mentioned in questions 3 (a), 4 (a), 5 (b)?

Biology.

NOTE—The work with the microscope—10 (a), (b), (c)—must be attempted.

Time—Two and one half hours.

1. State the points of similarity and difference between plants and animals.

2. Describe the structure of bone. How is it nourished?

3. Describe metabolism and give an example of it.

4. With reference to the Amoeba describe (a) any two fundamental properties of protoplasm, and (b) any two protoplasmic movements.

5. What is the difference between symmetry and differentiation? How do you account for each? Give the chief systems of symmetry and differentiation of the earthworm.

6. Draw a cross section of the rhizome of a fern (*Pteris aquilina*) to show its tissue systems. State the functions of each and mention the characteristics of any one.

7. "The life history of the fern, broadly speaking, consists of an alternation of generations." Explain. Describe, in outline, the germination of the spores of a brake.

8. Compare the mode of nutrition of the fern with that of the earthworm.

9. Give your reasons for considering yeast a plant or an animal. How do moisture, temperature and sunlight affect the growth of yeast? Why does canned fruit ferment while preserved fruit does not?

10. (a) Draw and describe section A as seen under the microscope. From what organ is it taken?

(b) Describe the cells in section B stating their uses to the organism of which they formed a part.

(c) Describe the tissue systems observed in section C.

PROFESSIONAL.

THIRD CLASS.

Organisation, Management and Law.

1. Describe a practical method of heating and ventilating rural schools.

2. What consideration would guide you in promoting a pupil from Standard III to Standard IV? What tests would you employ?

3. As educating agencies, discuss such combination games as football; such individual games as jumping.

4. State briefly the characteristics of a well managed school.

5. Describe any set of class tactics for dismissal of pupils at recess, or for distribution of books at the beginning of a lesson.

6. How should each of the following be treated—tardiness, improper language, fighting?

7. Outline a lesson for pupils in Standard II on “Kindness to Animals.”

8. State the provisions of The School Ordinance respecting recesses, school fees where parents are not ratepayers, keeping of school registers, grants payable on class of certificate held by teacher, mode of computing daily average attendance.

Literature.

I.

I shot an arrow into the air,
It fell to earth, I knew not where;
For, so swiftly it flew, the sight
Could not follow it in its flight.

I breathed a song into the air,
It fell to earth, I knew not where;
For who has sight so keen and strong,
That it can follow the flight of song?

Long, long afterward, in an oak
I found the arrow, still unbroke;
And the song, from beginning to end,
I found again in the heart of a friend.

—*Longfellow.*

- (a) Give a title for this poem that will indicate its essential thought.
- (b) State briefly the thought of the poem.
- (c) What effect is produced by l. 2 and l. 6?
- (d) In relation to the thought of the poem show why "oak" and "heart of a friend" are chosen. Show the suitability of "breathed," l. 5, and "flight," l. 8.
- (e) What considerations would guide you in determining whether to memorise this poem or not?

II.

Vainly the fowler's eye
Might mark thy distant flight to do thee wrong,
As, darkly painted on the crimson sky,
Thy figure floats along.

—Bryant's "To a Waterfowl."

- (a) Name three difficulties children in Standard III would be likely to find in understanding this passage.
- (b) Ask three questions intending to elucidate these difficulties.
- (c) Answer these questions.

III.

"The cognomen of Crane was not inapplicable to this person. He was tall, but exceedingly lank, with narrow shoulders, long arms and legs, hands that dangled a mile out of his sleeves, feet that might have served for shovels, and his whole frame most loosely hung together. His head was small, and flat at top, with huge ears, large green glassy eyes and a long snipe nose, so that it looked like a weathercock perched upon his spindle neck to tell which way the wind blew. To see him striding along the profile of a hill on a windy day, with his clothes bagging and fluttering about him, one might have mistaken him for the genius of famine descending upon the earth, or some scarecrow eloped from a cornfield."—Irving's "Legend of Sleepy Hollow."

(a) Ask not more than four questions which should lead pupils to discover the special impression which Irving aims at producing in this sketch. Answer each briefly.

(b) Ask questions which should lead pupils to see the effect produced by "cognomen," "inapplicable," and "a mile out of his sleeves" in the first two sentences.

(c) Ask questions which should lead pupils to see the force and suitability of "some scarecrow eloped from a cornfield."

Reading, Spelling and Writing.

1. State the main objects to be aimed at in teaching (a) primary reading; (b) advanced reading.

2. State the uses of supplementary reading in the first three Standards and mention material suitable for a class in Standard II.

3. Name the first six sounds you would teach to beginners, and show clearly what you would expect them to do with this knowledge.

4. "Silence," said the father, "one word more will make me chide you, girl! What! an advocate for an impostor! You think there are no more such fine men, having seen only him and Caliban." This he said to prove his daughter's constancy; and she replied, "My affections are most humble. I have no wish to see a goodlier man."

Give illustrations of how you will use this extract to teach (a) emphasis, (b) inflection, (c) pitch, and (d) rate.

5. Give the seat work that you would assign to a class in Standard IV to which you had just taught:

I am the daughter of earth and water,
And the nursling of the sky;
I pass through the pores of the ocean and shores;
I change but I cannot die.

6. (a) What preparatory teaching should be given to a class before asking the pupils to spell the difficult words in the extract in question 4? (b) Describe methods of correction to follow the testing of this teaching.

7. Describe your method of conducting a writing lesson on the word "English." Write this word with due regard to spacing and height.

Grammar and Composition.

1. (a) Show how you would lead a pupil in Standard V to analyse—

By yonder sandy cove, where, every day,
The tide flows in and out,
A lonely bird in sober brown and gray
Limps patiently about.

(b) What use to the pupil should such an exercise be?

2. What is meant by saying that parsing is essentially a deductive exercise? Illustrate your answer by an outline of a lesson on "phrases," with special reference to the selection in question 1.

3. (a) Give notes of a lesson on any one of the following—Preposition, case of nouns, "the verb *to be* has the same case after it as before it."

(b) What use to the pupil should such a lesson be?

4. Describe a practical method of teaching a class in Standard IV what a paragraph is and what two fundamental characteristics it should always have.

5. What directions would you give to a pupil for his guidance in making an outline for a composition on a subject drawn from geography, nature study or history?

6. Outline a method for the correction of such a composition.

Arithmetic and Algebra.

1. (a) What are the facts you will teach regarding the number 6? (b) Give specimens of the seat work to follow these lessons. (c) Make a

lesson plan for teaching $4+2=6$; $2+2+2=6$; $3 \times 2 = 6$; $\frac{1}{3}$ of $6=2$; $6 \div 2 = 3$.

2. Illustrate your method of teaching the relation of $\frac{1}{2}$ and $\frac{1}{3}$ to a Part II class.

3. Outline a lesson plan to teach a first lesson in percentage to a class in Standard II.

4. A pupil has failed to solve the following problem—"An insurance company took a risk on 75% of the value of a house at $2\frac{1}{2}\%$ premium and immediately afterwards reinsured $66\frac{2}{3}\%$ of the risk at 3% premium. The premium received exceeded the premium paid by \$15. Find the value of the house."

(a) What is the pupil's probable difficulty ?

(b) Write three specimen questions you will ask in leading him to the solution.

(c) Write the answers you expect.

(d) Write a proper solution of the problem.

5. Point out the similarity and dissimilarity between arithmetic and algebra.

6. Deduce the rule for subtraction in algebra.

7. Show how you will lead a pupil to write out, without actual multiplication, the result of any one of—

$$(3x + \frac{1}{2}y)^2 ; (x - y + z)(x + y - z) ; (x + 3)(x - 5)(x + 2).$$

8. Show how you will teach a class the principle of transposition in the solution of an equation.

9. Write the problem of which the following is the algebraic statement—

$$x + y = 140 \\ \frac{1}{2}x - 10 + \frac{2}{3}y + 5 = 75$$

Geometry and Mensuration.

1. "A man leaves his home at A and walks due north 8 miles to B ; he then walks 6 miles north-east to C ; from C he walks due east 12 miles to D ; at D he turns to his right through an angle of 90° and walks 16 miles in a straight line to E. How far is he from his home?" Draw to a scale 8 miles : 1 inch. Use only protractor and ruler. Mark the degrees in the angles.

2. AB is a line 12 feet long ; trisect it at C and D ; from C draw a line perpendicular to AB ; at D make an angle of 60° and produce the side to meet the perpendicular at F ; join AF.

Determine AF (a) by measurement, (b) by deduction. Use ruler, compass, protractor. Leave construction lines.

3. Show how you will lead a pupil to prove the fourth problem in Euclid, Book I.

4. A pupil has solved the ninth proposition in Euclid, Book I. What inferences will you lead him to make so that he may be able to solve independently the tenth proposition?

5. A cistern 14 feet in diameter and ten feet deep has its walls curbed with two inch plank.

Show how you will lead a pupil to find (a) the number of cubic yards of earth that have been thrown out, (b) the cost of the lumber to curb it at \$20 per thousand.

Geography and History.

1. State the uses, in teaching geography, of the following—The globe, photographs, map drawing, moulding in sand.

2. Give notes of a lesson on any two of the following—Formation and courses of rivers, trade winds, uses of mountains, climate as influenced by latitude.

3. Arrange topics for a series of lessons on the continent structure of North America. Account briefly for the order of topics. Write a summary of what you would teach about any one topic.

4. (a) State somewhat fully the advantages of approaching history through biography.

(b) Give notes of lessons on any two of the following—Bishop Laval, La Salle, Wolfe, Alexander Mackenzie, Alfred, Simon de Montfort, Oliver Cromwell.

(c) Show that these lessons illustrate what you have said in answer to a.

5. (a) Give notes of a lesson on Discovery of America, Treaty of Paris, War of 1812, Rebellion of 1837, or Seigneurial Tenure.

(b) Show that this lesson illustrates one or more of the chief objects sought in teaching history in an elementary school.

Elementary Science.

1. Plan a series of lessons on the germination and growth of a bean or a pea.

2. Give notes of a lesson on the hen or the cow, suitable for Standard II. State the objects of the lesson.

3. Illustrate how nature study, literature, composition, reading and drawing may be correlated.

4. Give notes of a lesson to Standard III on restoring fertility to exhausted soils. State briefly the uses of such a lesson.

5. Give notes of a lesson on methods of destroying weeds, taking as an example the tumble weed or the Canada thistle.

6. A man, after a walk in autumn, feels somewhat cold and faint. He is offered a cup of coffee, a glass of wine, or a glass of beef tea. Which should he take?

Give notes of a lesson intended to aid pupils to give a rational answer to this question.

7. Give notes of a lesson to pupils below Standard III on the care of the teeth.

Pedagogy.

1. "The conclusion is reached that learning to read and write should be the leading study of the pupil in his first four years of school."—*Report Committee Fifteen*. Give the arguments by which this conclusion is reached. Criticise the conclusion.

2. "Every act of the soul leaves as an enduring result increased power and tendency." Explain. Show the value of this maxim in the intellectual and moral training of the child.

3. Compare the discipline of the school and the discipline of the home in the formation of character.

4. Discuss the values of regulated and unregulated sports (games) at school.

5. "We must proceed from simple to complex." Give illustrations of the application of this maxim in teaching topics in grammar and history.

6. By what tests will you determine the success of a teaching exercise?

7. Describe the characteristics and advantages of proper blackboard summaries.

Psychology.

1. "It is the brain that sees and not the eye." Comment on the truth of this statement and on its bearing on the teacher's work.

2. "Feeling, knowing and willing are properties of the mind which can neither be isolated from it nor from one another." Illustrate the statement of the text and show its educational bearings.

3. (a) What are the most common causes of inattention? State how you would deal with them.

(b) "The teacher is driven back to an appeal to the child's involuntary attention."—*Dexter*. When is this true, and why?

4. "That we may master the outer world, we are endowed with sense perception."—*Baldwin*.

(a) How may the teachers aid in sense development?

(b) Discuss the use and danger of pictorial illustration in school.

5. (a) Distinguish between memory and the imagination, memory and perception, memory and conception.

(b) What are the conditions, physical and psychical, upon which memorising depends?

6. (a) Give the process involved in forming a judgment, (b) the main causes of incorrect judgments and (c) the way in which you would deal with any one of these causes.

7. Discuss the more important educational aspects of anger in children under the headings (*a*) origin, (*b*) forms, (*c*) preservative treatment, (*d*) restraint.

8. By what sort of discipline and exercise may the will be trained in school.

History of Education.

1. Point out the excellences and defects of "Humanistic" education.
2. Give a sketch of the educational work of John Sturm.
3. Point out the excellences and defects of "Realistic" education.
4. Give a sketch of the educational work of Comenius.
5. Point out the excellences and defects of "Naturalistic" education.
6. Give a summary of the educational views of Locke.

Organisation, Management and Law.

1. Describe an effective method of heating and ventilating an ungraded rural school.

2. By what tests will you determine the proper classification of pupils?

3. What considerations will guide you in determining the character and amount of seat work to be given in connection with any lesson?

4. Describe class tactics you will employ in calling up and dismissing classes.

5. If you found the class you were teaching growing listless and sleepy, what causes would you suppose to be at work and what would be your remedies?

6. State the means you would employ, and the purpose you have in view in dealing with any two of the following offences—Copying, rude manners, impertinence, fighting, tattling.

7. Discuss the advantages and disadvantages of monthly reports.

8. State briefly the substance of the provisions of The School Ordinance with regard to holidays in schools not open for the whole year, public examinations, contagious diseases.

Literature, Reading, Spelling.

The brooklet came from the mountain,
As sang the bard of old,
Running with feet of silver
Over the sands of gold!

Far away in the briny ocean
There rolled a turbulent wave
Now singing along the sea beach,
Now howling along the cave.

And the brooklet has found the billow,
 Though they flowed so far apart,
 And has filled with its freshness and sweetness
 That turbulent, bitter heart !

1. Illustrate how you will lead pupils to give the meaning of each stanza and their connection in thought.
2. How will you lead pupils to perceive the meaning of ll. 3-4 ?
3. Illustrate how you will bring out the force of "singing," "howling," in stanza II, and "turbulent," "bitter," in stanza III.
4. What do you conceive to be the "inner meaning" of this poem ?
5. Give the verse scheme of this poem and scan the first stanza.
6. Illustrate methods of teaching phrasing and rate in a reading lesson, using stanza II as the basis.
7. Describe any two methods commonly employed for teaching young children the first steps in reading. State which you prefer and give your reasons.
8. Name four words in the spelling of which young children often make mistakes, and show how each mistake may be corrected or avoided.

Grammar, Composition, Writing.

1. "It is the relation of a word to other words and not its meaning that determines the part of speech it is." Discuss and illustrate.
2. State the difficulties that pupils in Standard V would probably experience in analysing "Passing through a ravine, they came to a hollow like a small amphitheatre, surrounded by perpendicular precipices." Indicate how you will deal with the principal one.
3. Make notes of a lesson on any two of the following—The classification of conjunctions, the inflection of adjectives, the distinction between compound and complex sentences, word building, voice.
4. How will you teach pupils in Standard III to write a description of an apple? Make a copy of your blackboard summary.
5. Our first essay (in fishing) was along a mountain brook, among the Highlands of the Hudson. It was one of those wild streams that lavish, among our romantic solitudes, unheeded beauties, enough to fill the sketch book of a hunter of the picturesque. Sometimes it would leap down rocky shelves, making small cascades, over which the trees threw their broad balancing sprays ; and long nameless weeds hung in fringes from the impending banks, dripping with diamond drops. Sometimes it would brawl and fret along a ravine in the matted shade of a forest, filling it with murmurs, and after this termagant career, would steal forth into open day with the most demure face imaginable. How smoothly would this vagrant brook glide, at such times, through some bosom of green meadow land among the mountains ; where the quiet was only interrupted by the occasional tinkling of a bell from the lazy cattle among the clover, or the sound of a wood cutter's axe from the neighbouring forest."—*Irving*.

(a) Make an analysis of this descriptive paragraph, showing the theme, general introduction, and characteristic details.

(b) What use would you make of such an analysis in teaching composition to Standard V pupils?

6. Describe a plan for conducting a writing lesson in an ungraded school.

Arithmetic and Algebra.

1. "Arithmetic is the first great step in the conquest of nature."—*Committee of Fifteen*. Discuss and apply to school work.

2. What are the chief difficulties that arise in primary number work? Show how you will endeavour to meet them.

3. Outline the steps by which the difficulties of teaching "carrying" in subtraction may be overcome.

4. When and how will you teach least common multiple?

5. If $\frac{5}{9}$ the value of a mare is equal to $\frac{5}{4}$ the value of her colt and $33\frac{1}{3}\%$ of the difference between their values is \$20, what are they worth together?

(a) Give a method of teaching this question—objective if possible.

(b) Give an acceptable solution for the above.

6. "The transformation of numbers belongs strictly to algebra."—*Committee of Fifteen*. Illustrate the advantage gained by this characteristic.

7. The number of hours from the present till midnight is three times that of the number since noon. What time is it?

(a) Illustrate the probable difficulties that the pupils will have and your manner of dealing with them.

(b) Give an acceptable solution.

(c) Give another question involving the same principle but different in form.

8. Show how the factoring of $6x^2 - 20xy + 6y^2$ may be taught.

Geometry and Mensuration.

NOTE: Instruments—ruler, protractor, compass and triangle. Accuracy of drawing is required in construction.

1. What claims, practical and disciplinary, has geometry for a place on the public school programme?

2. How will you develop the concepts *point*, *line*, *surface* (plane and curved) to beginners in geometry.

3. (a) Construct three equal circles in a row touching one another.

(b) Invent a deduction based upon (a) concerning parallel lines, and prove it.

4. Indicate how to present Euclid I. 4 to a class.
5. A park has a circular lake $94\frac{2}{7}$ rods in circumference. Find the length of the longest direct path to the lake from a pavilion 5 rods from the lake.
6. Outline a lesson teaching the area of the surface of a cylinder.
7. (a) Construct a triangle, the length of the three sides being given.
(b) How could this problem be used to show different kinds of triangles?
(c) How could it be used to show a property of all triangles?
8. Define angle of elevation and angle of depression and write two problems of different types that will show the usefulness of these angles in geometry.
9. Represent a field by drawing (scale $\frac{1}{8}$ inch to one rod), from A, a line east 14 rods to B. From B continue AB in a dotted line east 10 rods to C. Twelve rods north of C place a dot at D. Connect B and D by a straight line. From D draw a straight line south 26 rods to E. From E, west 20 rods to F. From F 8 rods towards A to G. From G south-west at right angles 10 rods to H. Connect H and A by a straight line. How many acres in enclosed lot?

History.

1. Discuss the use of biography as an introduction to history. Name three persons whose biography would throw light on the history of the Norman period and give an outline of what you would teach about any one of these.
2. "History in school, it is contended, should be the special branch for education in the duties of citizenship."—*Report Committee Fifteen*. Give reasons for this contention and indicate ways in which the history lesson may teach these duties.
3. Discuss the use of ballad poetry in the teaching of history and mention some suitable ballads.
4. Give notes of lessons on any two of the following—The Magna Charter, the Repeal of the Corn Laws, the Feudal System, the Spanish Armada. State the purpose of each lesson.
5. Give notes of a lesson on Clergy Reserves, Seigniorial Tenure, the War of 1821, or the Treaty of Paris.

Geography and Elementary Science.

1. "The chief purpose of this study is to enable pupils to perceive the earth's essential surface features and the relation thereto of man's modes of living."

What are these "essential features?" Give illustrations of the "relation thereto of man's modes of living."

2. "The habit of thinking of the map and the map alone is an almost insurmountable obstruction in the way of a teacher's ever learning to teach real geography."

"The power to understand a map correctly is of indispensable importance in the study of geography."

In the light of these statements discuss the true place and function of maps.

3. Give an outline of a series of lessons on winds to pupils in Standard III.

4. Give an outline of a lesson on Winnipeg as a commercial centre. (Standard IV pupils.)

5. Arrange topics for a series of lessons on the continent structure of North America. Write a summary of what you will teach on any one topic.

6. Give an outline of a lesson to Standard IV pupils on the hen, the sheep or the preparation of the soil for a crop of carrots.

7. Give an outline of a lesson to Standard II pupils on buds, the germination of seeds or the structure of the stem.

8. Arrange topics suitable for a lesson on the care of the pupil's teeth or ears. (Standard III.)

FIRST CLASS.

Philosophy of Education.

1. "The education of the child must accord both in mode and arrangement with the education of mankind considered historically."—*Spencer*. Criticise.

2. "There is no child in general, but children differ from each other both generically and specifically."—*Wilton*. Examine this statement and show its bearing on educational work.

3. "Spencer may be reasonably blamed for calling the system of *natural* consequences *moral* education."—*Guyau*. "Punishment can not be determined as to its application by mere reference to the deed."—*Rosenkranz*. State and, in the light of these quotations, criticise Spencer's doctrine of the discipline of consequences. (Inevitable reactions.)

4. "In order to the full realisation of human capability and human life each of us has to be subjected to the educative influence of the home and the community." Discuss.

5. "Proceed from the concrete to the abstract." "With the concrete we should begin, and with the concrete we should end." Explain these maxims. Which is the truer?

6. Distinguish inductive and deductive methods of teaching and mention the advantages and disadvantages of each.

7. "It must still be to mathematics and languages that the teacher must turn when he wishes to train his pupils in drawing conclusions which are demonstrably certain." Discuss.

Psychology.

1. Give a physiological explanation of the phenomena of brain fatigue. Show the bearing of this upon school exercises.

2. "All the cognitive work we do is resolved into (a) differentiating material, (b) assimilating material and (c) associating or complicating material." By means of notes of a lesson on angle, adjective or peninsula, illustrate this.

3. State the law of contiguity and give illustrations of its use in teaching topics in elementary science and literature.

4. Describe in a general way modes of cultivating the imagination. Give illustrations of such modes in teaching topics in history and geography.

5. (a) Show that the process of judging illustrates the two fundamental elements, analysis and synthesis.

(b) Mention some causes of indistinctness in the judgments of children and suggest exercises to prevent or remedy these.

6. Discuss the relation of exercise of the motor organs to the early training of the will.

History of Education.

1. Point out the strength and weakness of the "Passive" system of education.

2. Describe in a general way Athenian education and contrast it with our own.

3. Point out the strength and weakness of "Humanistic" education.

4. Give a sketch of Chivalric education.

5. Criticise Rousseau's educational theories.

6. Give a summary of the educational views of Pestalozzi and account for his influence on pedagogy.

Organisation, Management and Law.

1. Describe satisfactory methods of seating and lighting an ungraded rural school.

2. State the grounds on which pupils should be promoted.

3. Mention the most important points to be kept in view in the construction of a time table.

4. "Securing the regular and punctual attendance of his pupils is an essential part of the work of a teacher." Discuss.

5. What conditions should govern the kind and amount of home work to be given to children above Standard II.

6. State the means you will employ, and the purpose you have in view, in dealing with any two of the following offences--Bullying, swearing, cruelty, impertinence.

7. Discuss the effects upon the pupil of competition for prizes in school.

8. State briefly the substance of the provisions of The School Ordinance with regard to religious exercises, compulsory education, teachers' agreements.

Literature, Reading, Spelling.

A Poet! He hath put his heart to school,
Nor dares to move unpropped upon the staff
Which Art hath lodged within his hand—must laugh
By precept only, and shed tears by rule.
Thy Art be Nature: the live current quaff,
And let the groveller sip his stagnant pool,
In fear that else, when Critics grave and cool
Have killed him, Scorn should write his epitaph.
How does the Meadow flower its bloom unfold?
Because the lovely little flower is free
Down to its root, and in that freedom, bold;
And so the grandeur of the Forest tree
Comes not by casting in a formal mould
But from its *own* divine vitality.

1. Illustrate how you will lead pupils to give the function of each quatrain.

2. Give the meaning of the second tercet and its thought relation to the rest of the sonnet.

3. Indicate how the rhyme scheme may be connected with the stages of thought.

4. Show how you will lead pupils to see the force and appropriateness of "laugh" and "shed tears."

5. Illustrate how you will deal with figurative language such as "live current," "Scorn."

6. Discuss the value of good oral reading in the teaching of poetry.

7. How will you lead pupils to perceive differences in rate of reading ll. 2—4, and ll. 10—12; differences in emphasis ll. 5—6?

8. What difficulties in spelling and orthœpy are found in ll. 2—6? Outline plans for overcoming these with Standard III pupils.

Grammar, Composition, Writing.

1. Distinguish, after Laurie, nutrition, training and discipline and show how he applies this in discussing the function of grammar in the public school.

2. "The pupil must determine the relations of the words in sentences by what he conceives to be the relations of the ideas in the thought." How will a belief in this statement affect the planning of a first course in elementary grammar?

3. Outline lessons on any two of the following—The principle of ease in word formation, the appositive adjective, the distinction between participles and gerunds, the distinction between simple and complex sentences, the position of phrases.

4. "It is in the country that the Englishman gives scope to his natural feelings. He breaks loose gladly from the cold formalities and negative civilities of town; throws off his habit of shy reserve, and becomes joyous and free hearted. He manages to collect round him all the conveniences and elegancies of polite life, and to banish its restraints. His country seat abounds with every requisite, either for studious retirement, tasteful gratification, or rural exercise. Books, paintings, music, horses, dogs and sporting implements of all kinds are at hand. He puts no constraint upon his guests or himself, but in the true spirit of hospitality provides the means of enjoyment, and leaves everyone to partake according to his inclination."

Show by means of this paragraph how you will develop the ideas of unity, continuity and parallel construction. Give your blackboard summary.

5. Describe a plan for revising a written composition.

6. Describe a plan for conducting a writing lesson in an ungraded school.

Arithmetic and Algebra.

1. "A teacher who has always taught figures and fancies them numbers, rarely learns what a number really is.—*Harris*."

(a) Explain what is meant. (b) Illustrate from primary work what means may be taken to avoid this error.

2. In the apprehension of the fraction the child "has an expressed ratio of two numbers." "In thinking five-sixths he first thinks five and then six and holding these two in mind thinks the result of the first modified by the second."

(a) Criticise this statement. (b) Illustrate from your criticism how you would teach $\frac{5}{6} \div \frac{7}{8}$.

3. (a) Give types of seat work for Standards I (Part I and II) and II.

(b) What place will you give to tables of measurement in the school room?

4. A retail merchant professes to charge 20% above the wholesale price, but he has adulterated his goods with 25% of an inferior kind costing only half as much. What is the real rate per cent. of profit?

(a) Give an outline for an introductory lesson on this type of question. (b) Write out an acceptable solution.

5. When the pupil has mastered the expansion $(x+y)^2 = x^2 + 2xy + y^2$, show how he may be led to infer from it without actual multiplication the expansion of the following: $(xy-)^2$; $(x+y)(x-y)$; $(x+y+z)^2$.

6. (a) What are the pupil's probable difficulties in solving the following equation? How will you deal with these?

(b) Solve the equation

$$\frac{4x-17}{9} - \frac{3\frac{2}{3}-22x}{33} = x - \frac{6}{x} \left(1 - \frac{x^2}{54} \right)$$

Geometry and Mensuration.

NOTE: Instruments—ruler, protractor, and compass. Accuracy in drawing is required in constructions.

1. Discuss the claim that Geometry unfits a child for the study of Euclid.

2. (a) Divide a line into $2\frac{1}{2}$ equal parts.

(b) Show by means of this problem a difference between Geometry and Euclid.

3. (a) Given the base of an isosceles triangle, complete the triangle.

(b) How many such triangles can you construct on this base? Prove.

4. Outline three ways of bisecting an angle.

5. A man has a farm of the shape of an equilateral triangle. He wishes to divide it into four equal and similar parts. How may it be done? Into three? Into six?

6. (a) Two houses, not opposite each other, are situated on different sides of a straight railroad and at unequal distances from it. The roads from them to the common crossing make equal angles with the railroad. Find the crossing point. (Prove after Euclid.)

(b) What difficulties will the pupil likely meet in this question? How will you prepare him for them?

7. (a) Construct a trapezoid, the bases, the altitude and one leg being given.

(b) Show how its area may be ascertained.

7. Indicate how to present Euclid 1. 32 to a class.

9. A man starts from A and goes north 14 rods to B, then east 14 rods to C, then in a semicircle in a south-westerly direction to a place called D 14 rods west of B, then from D in a semicircle in a south-easterly direction to B, then from B north-east to a point F which is 12 rods north of the middle point of BC, then from F east to G 14 rods, then from G to B. Find the area of the land within the figure described. (Draw to scale, one inch equals two rods.)

History.

1. State somewhat fully the objects of historical study in the public school standards.

2. Give the arguments in favour of the study of the history of Greece and Rome early in the high school course.

3. Discuss the advantages and defects of study by topics with parallel reading.

4. What is meant by the intensive study of history? State its advantages.

5. Describe the uses of the historical novel and ballad in teaching history.

6. Give notes of lessons on any two of the following—The Rebellion of 1837, early methods of colonisation in the New England States and Canada, the National Policy, the Feudal System in England, the Habeas Corpus Act, the Corn Law of 1815 and its effect. State the purpose of each lesson.

Geography and Elementary Science.

1. "Geography is the open door to all the sciences."—*Harris*. Show that facts and methods in your teaching of geography sustain this statement.

2. Give illustrations of how the study of geography may be made a helpful adjunct to history.

3. Under the heads of climate, drainage, soil, discuss the effect of slopes in the economy of world life.

4. Give an outline of lessons to Standard III pupils on the great wind currents of the globe. Show (*a*) presupposed knowledge, (*b*) facts you would teach, (*c*) nature of seat or home work.

5. Give an outline of a lesson on the geographical conditions that control the location of manufacturing or shipping centres. (Standard V pupils.)

6. Arrange topics for a series of lessons on the continent structure of North America. Write a summary of what you will teach on any one topic.

7. Outline a lesson to Standard V pupils on a fish, a hen or a dog. State the chief purposes of such a lesson at this stage.

8. Outline a lesson on seed dissemination in plants or on function and adaptation of leaves.

9. Mention various ways in which a teacher may assist in the preservation of his pupils' eyesight.

FIRST AND SECOND CLASS.

Music (Theory).

1. Discuss the importance of music as a school study.

2. Define and give illustrations of staff, bar, tie, measure, pause, sharp, flat, accidental.

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3. Write four measures of music in the key of D $\frac{3}{4}$ giving variety in time and tune. Write time names under the notes.
4. Give instructions for finding the following keys from the pitch of C : G, B \flat , F, A.
5. Make a diagram of the major scale placing in it pitch names, syllable names, and numerals.
6. Write three measures of "God Save the Queen" in the key of F $\frac{3}{4}$.

Drawing.

1. Make a sketch of the pupil as placed on the platform. (Time—Fifteen minutes.)
2. Draw from memory a common kitchen table.
3. On a stand there are a book, a music roll, and a child's ball. What type models are represented? Make a shaded drawing of these models grouped in a pleasing manner.
4. Using a scale of half an inch to a foot draw an end view of a piano case, 5 feet long ; 4 ft. 6 in. high at the back and 3 ft. high in front ; 2 ft. 6 in. wide at the bottom and 1 ft. 6 in. wide at the top.
5. Using the same scale make a working drawing of this piano case.
6. Illustrate simply any two of the following—
 - (a) The foot and beak of the hen.
 - (b) A lesson on the lake as an expansion of the river.
 - (c) Over my shaded doorway
Two little brown winged birds
Have chosen to fashion their dwelling,
And utter their loving words.

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